

PCI Bus CPD

HPCI -CPD 578N

HPCI -CPD 574N

NC

 **株式会社 ハイバーテック**

<http://www.hivertec.co.jp/>



**CPD**

HPCI-CPD578N    **PCI Bus**

HPCI-CPD574N    **PCI Bus**

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Microsoft    Microsoft Corporation  
Windows    Windows 98    Windows NT 4.0    Windows 2000    Windows XP    Windows Vista    Windows 7    Microsoft  
Corporation  
Visual Studio    Visual Basic    Visual C#    Visual C++    Microsoft Corporation  
  
.NET Framework    Microsoft Corporation

1-8-11

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# 1.

## 1.1

1.

2.

2

## 1.2

1

2

3

4

### 1.3

NC


#### 1.3.1

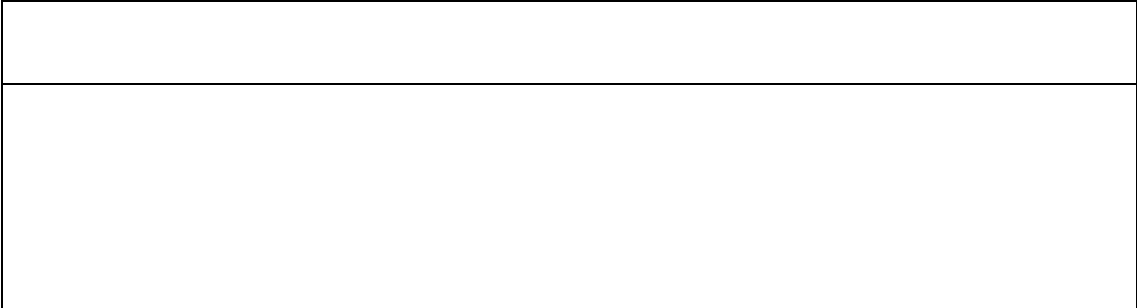
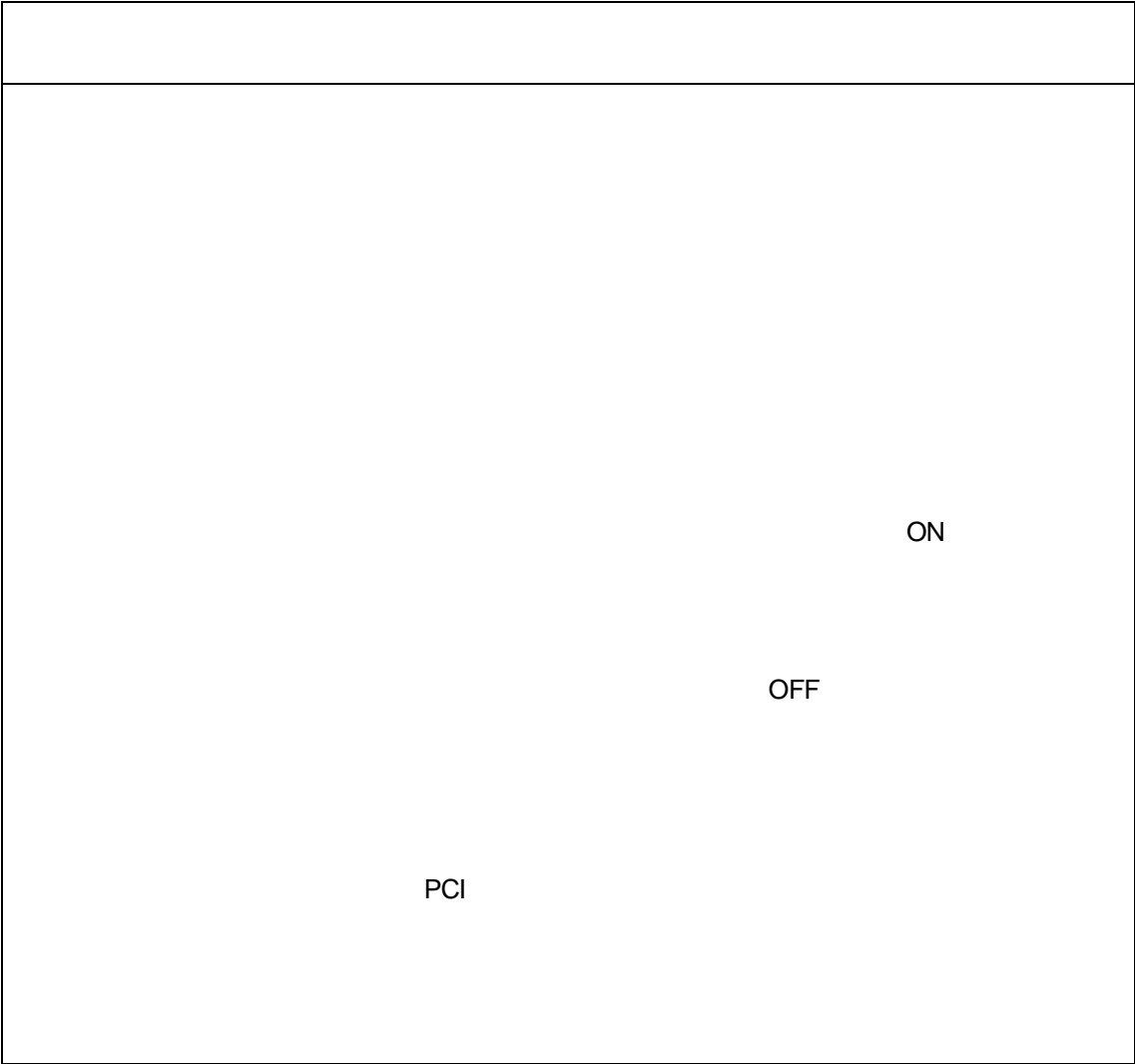

#### 1.3.2 Bus

PCI Local Bus Specification Rev.2.2 ( ) PCI Local Bus Specification Rev.2.2

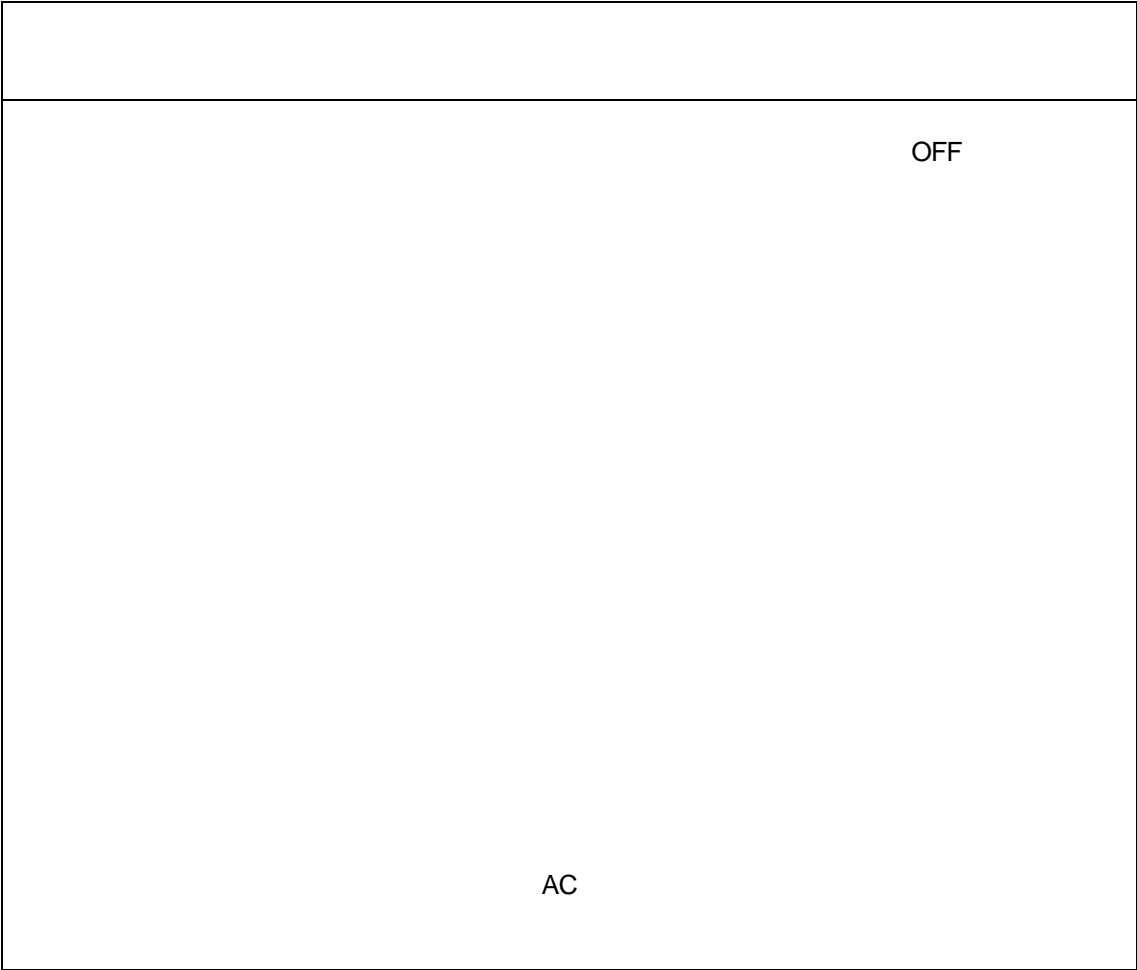
#### 1.3.3

'	0	+50		
'	20%RH	85%RH(	)	
'	-15	+75		
'	10%RH	90%RH(	)	
'				
'		3000m	(300m	2 )

1.3.4



**1.3.5**



**1.3.6**



1.3.7


1.3.8


1.3.9


## 1.4

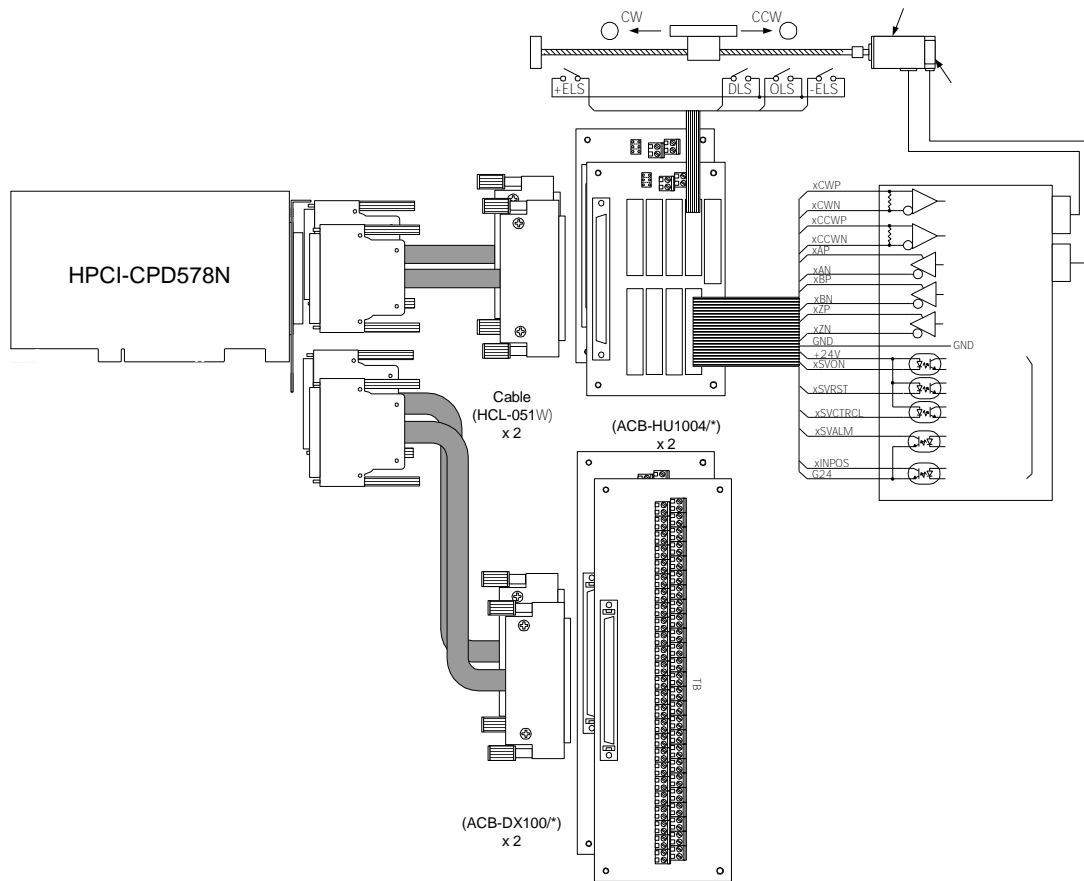
CPD

1. CPD < >  
(1)  
(2)  
(3)  
(4)  
(5)
  
2. CPD < >  
CPD  
(1) VC++ VB VC# DOS  
(2) / VC++ VB VC# DOS
  
3. CPD < >  
CPD  
(1)CPD  
(2)CPD  
  
(3)PCL6045  
(4)



## 2.4

6.



2.4-1 CPD578N

## 2.5

			4.8				
(1)		24V	(+12V	+5V)			
(2)		XSVAlM	VSVAlM	XDLS	VDLS		
(3)	JOG			XDLS	YDLS	ZDLS	UDLS

HPCI-CPD578N | EXP1 2 EMG JOG

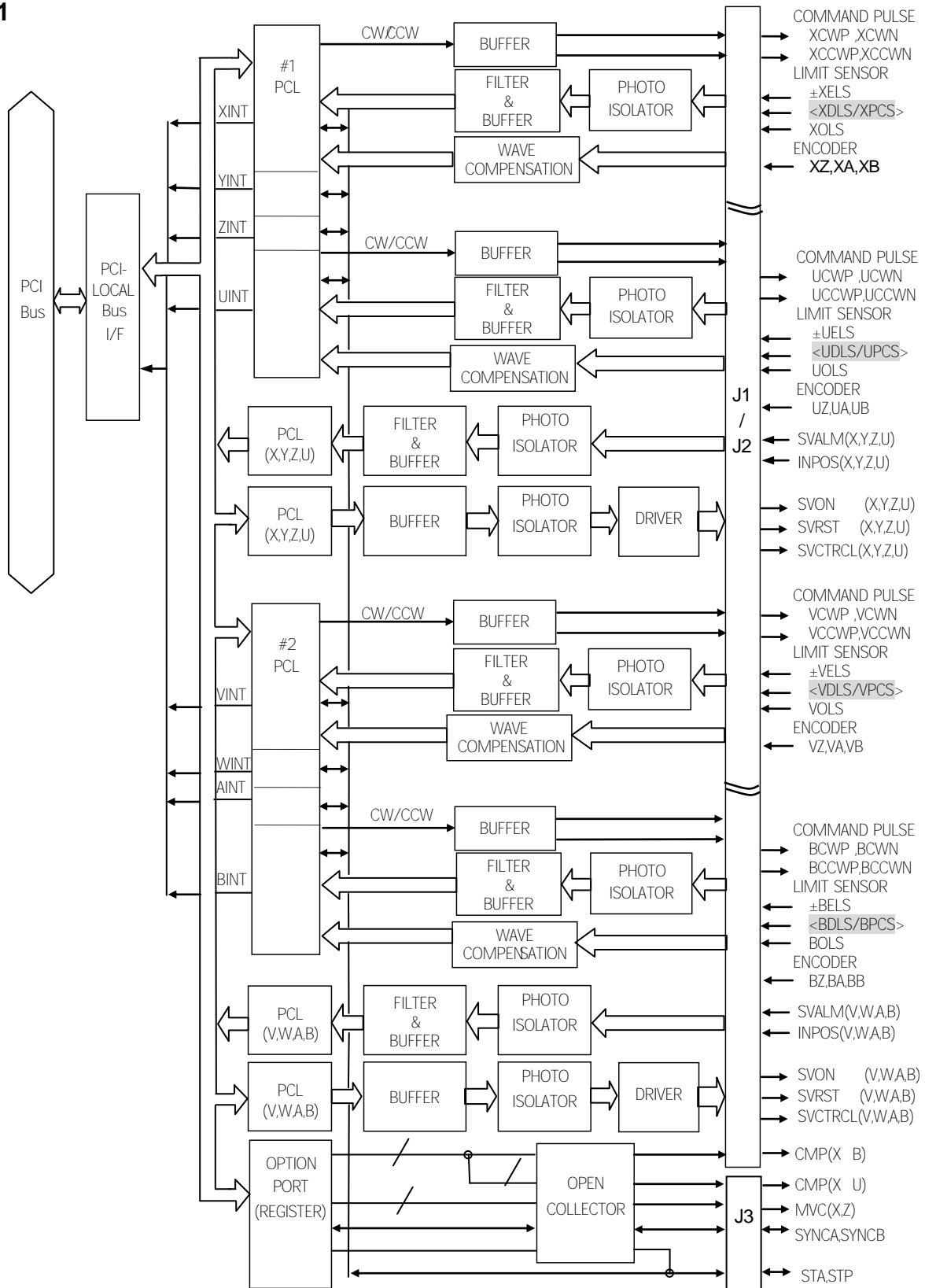
5 EXTPOW1 5V      C EXTPOW1 12  
5 EXTPOW2 5V      C EXTPOW2 12  
1 XSVAlM  
2 VSVAlM  
3 XSVAlM VSVAlM  
4 XDLS  
5 VDLS  
6 XDLS VDLS  
1 XDLS YDLS ZDLS UDLS JOG

HPCI-CPD574N | EXP1 2 EMG JOG

5 EXTPOW1 5V      C EXTPOW1 12  
5 EXTPOW2 5V      C EXTPOW2 12  
1 XSVAlM  
4 XDLS  
1 XDLS YDLS ZDLS UDLS JOG

3.

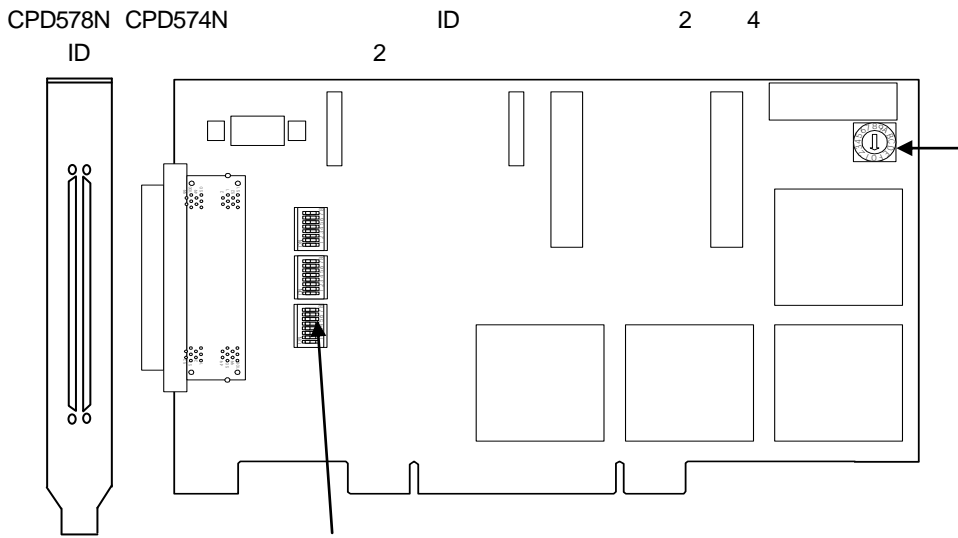
3.1



- 1. xDLS xPCS
- 2.CPD574N V-B

3.1-1

### 3.2



3.1-1

#### 3.2.1 ID

CPD578N CPD574N  
ID

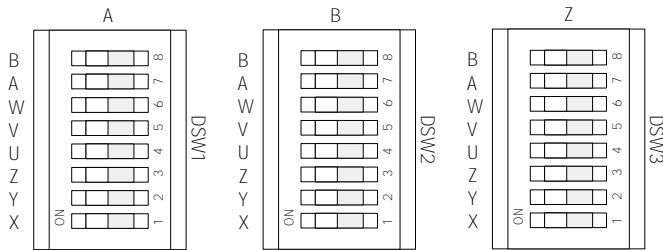
ID(0 Fh)  
( ID=0)



3.2-2 ID

#### 3.2.2

A/B DSW1 DSW2  
Z  
A/B ON ( )  
Z  
ON ( )  
OFF ( +5V )



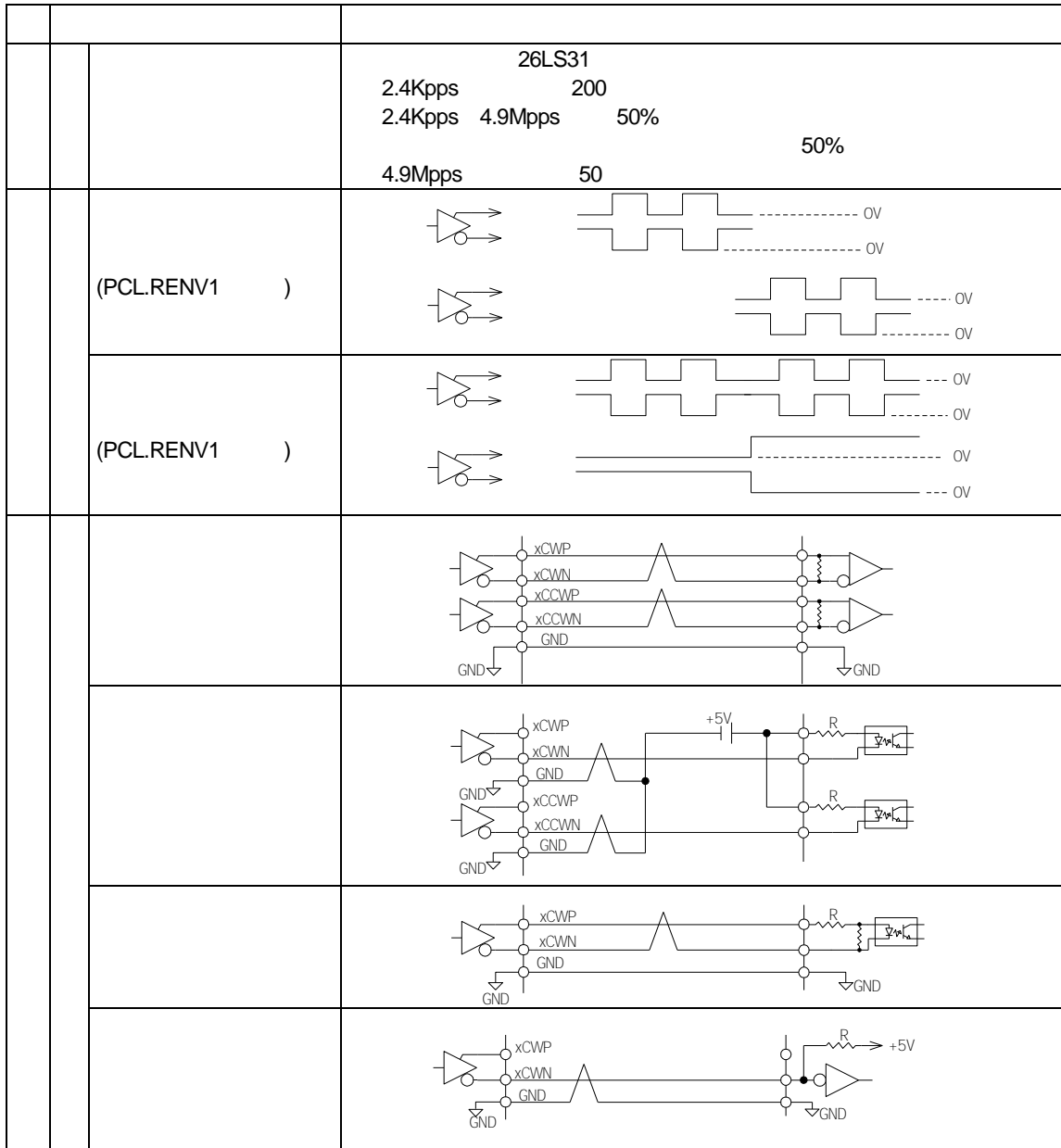
.CPD574N V~B  
3.2-3

A/B

Z

### 3.3

#### 3.3.1



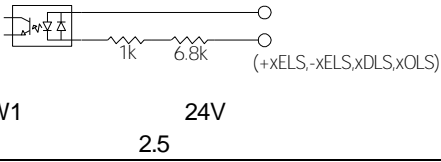
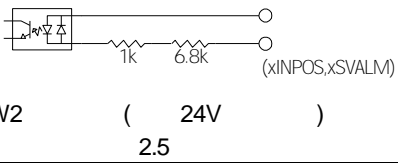
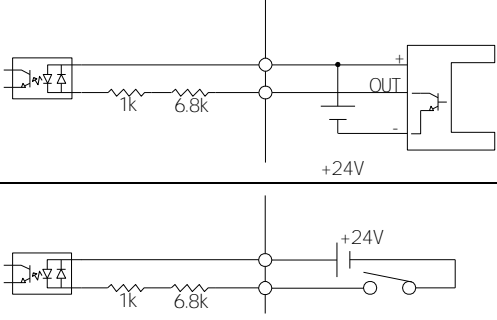
500Kpps(

3m) TTL

250Kpps(1 )

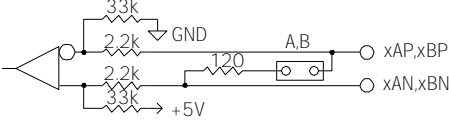
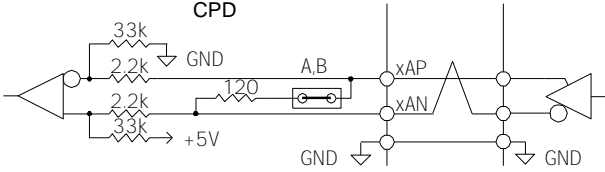
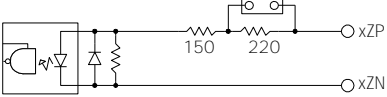
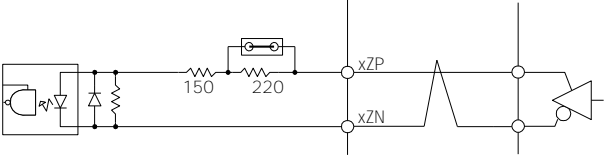
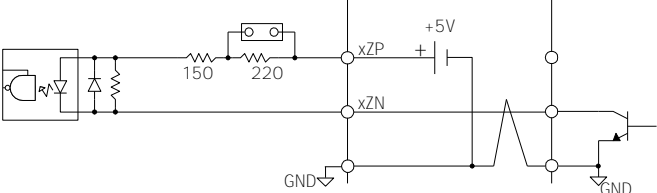
3.3-1

### 3.3.2

1	1	±xELS,xDLS,xOLS	 <p>EXTPOW1 24V ( 2.5 )</p>
2	2	xINPOS xSVALM	 <p>EXTPOW2 ( 24V ) ( 2.5 )</p>
3		±xELS,xDLS,xOLS, xINPOS,xSVALM	A ON B OFF
		±xELS xDLS,xOLS, xINPOS,xSVALM	ELS DLS,OLS,INPOS,SVALM PCL.RENV1 ( < > )
4			

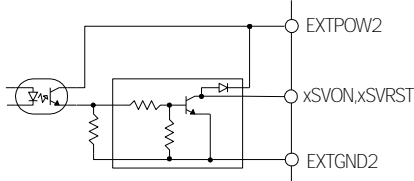
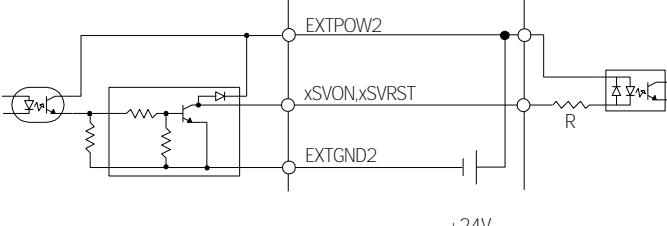
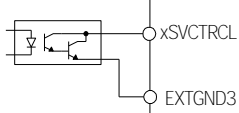
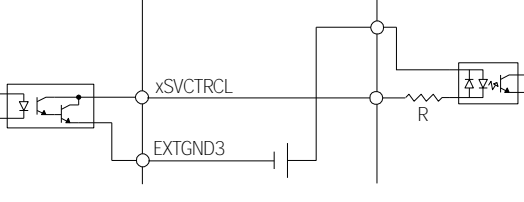
3.3-2

### 3.3.3

1	A/B	 <p>26LS32</p> <p>A/B</p> <p>26LS32 (-)</p> <p>P (+) N (-)</p>
2	A/B	PCL.RENV2.bit26
3	A/B	 <p>CPD</p>
4	Z	
5	Z	
5	( Z OFF )	

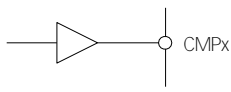
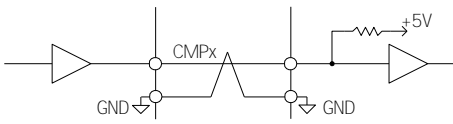
3.3-3

### 3.3.4

1	xSVON xSVRST	 <p>DC12V DC24V 80mA /1 8 400mA</p>
2	( )	ON xSVON xSVRST ON
3		 <p>+24V</p>
4	xSVCTRCL	 <p>DC5V DC24V 16mA /1</p>
5	( )	PCL PCL.RENV1
6		 <p>+24V</p>

3.3-4

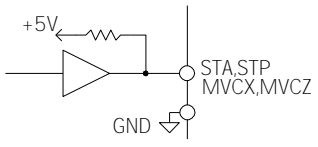
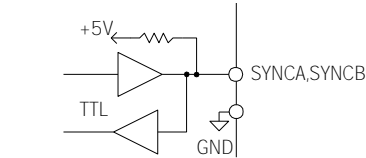
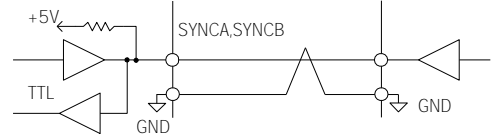
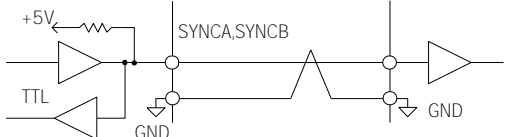
### 3.3.5

1	J1 J2		TypDC5V 30mA
		<b>ON</b>	
	J1: CMPX CPU J2: CMPV CPB		

.CPD574N J2

3.3-5 J1 J2

### 3.3.6 J3

1	J3		DC5V 6mA
	CMP-X CMP-U	<b>Low</b>	
	STA/STP / ( ) MVCX/MVCZ	10: PCL.RENV2.bit5.4 High 11: Low	
2	J3		
	SYNCA,SYNCB)		
	SYNCA,SYNCB		
			

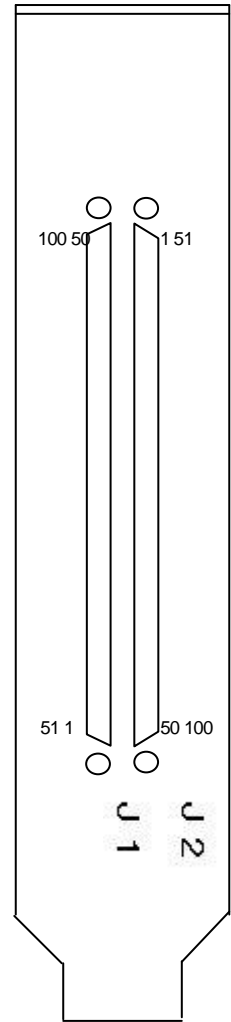
3.3-6 J3

### 3.4

#### 3.4.1 J1

J1		J2	J1 X U		J2	V	B
1	+5V		51	GND			
2	+5V		52	GND			
3	XCWP (CW +)		53	ZCWP (CW +)			
4	XCWN (CW -)		54	ZCWN (CW -)			
5	XCCWP (CCW +)		55	ZCCWP (CCW +)			
6	XCCWN (CCW -)		56	ZCCWN (CCW -)			
7	YCWP (CW +)		57	UCWP (CW +)			
8	YCWN (CW -)		58	UCWN (CW -)			
9	YCCWP (CCW +)		59	UCCWP (CCW +)			
10	YCCWN (CCW -)		60	UCCWN (CCW -)			
11	XAP ( A +)		61	ZAP ( A +)			
12	XAN ( A -)		62	ZAN ( A -)			
13	XBP ( B +)		63	ZBP ( B +)			
14	XBN ( B -)		64	ZBN ( B -)			
15	XZP ( Z +)		65	ZZP ( Z +)			
16	XZN ( Z -)		66	ZZN ( Z -)			
17	YAP ( A +)		67	UAP ( A +)			
18	YAN ( A -)		68	UAN ( A -)			
19	YBP ( B +)		69	UBP ( B +)			
20	YBN ( B -)		70	UBN ( B -)			
21	YZP ( Z +)		71	UZP ( Z +)			
22	YZN ( Z -)		72	UZN ( Z -)			
23	GND		73	EXTGND3 (xSVCTRCL GND)			
24	GND		74	EXTGND (xSVCTRCL GND)			
25	XSVCTRCL( )		75	ZSVCTRCL( )			
26	YSVCTRCL( )		76	USVCTRCL( )			
27	XSVALM ( )		77	ZSVALM ( )			
28	XINPOS ( )		78	ZINPOS ( )			
29	XSVON ( ON )		79	ZSVON ( ON )			
30	XSVRST ( )		80	ZSVRST ( )			
31	YSVALM ( )		81	USVALM ( )			
32	YINPOS ( )		82	UINPOS ( )			
33	YSVON ( ON )		83	USVON ( ON )			
34	YSVRST ( )		84	USVRST ( )			
35	EXTPOW2 (+24V )		85	EXTGND2 (+24V GND)			
36	EXTPOW2 (+24V )		86	EXTGND2 (+24V GND)			
37	+XELS (CW )		87	+ZELS (CW )			
38	-XELS (CCW )		88	-ZELS (CCW )			
39	XDLS ( )		89	ZDLS ( )			
40	XOLS ( )		90	ZOLS ( )			
41	+YELS (CW )		91	+UELS (CW )			
42	-YELS (CCW )		92	-UELS (CCW )			
43	YDLS ( )		93	UDLS ( )			
44	YOLS ( )		94	UOLS ( )			
45	EXTPOW1 (+24V )		95	EXTPOW1 (+24V )			
46	EXTPOW1 (+24V )		96	EXTPOW1 (+24V )			
47	+5V		97	GND			
48	+5V		98	GND			
49	CMPX (TTL OC )		99	CMPZ (TTL OC )			
50	CMPY (TTL OC )		100	CMPU (TTL OC )			

3.4-1 J1 X-U



3.4-1

### 3.4.2 J2

.CPD574N J2

1	+5V	51	GND
2	+5V	52	GND
3	VCWP (CW +)	53	ACWP (CW +)
4	VCWN (CW -)	54	ACWN (CW -)
5	VCCWP (CCW +)	55	ACCWP (CCW +)
6	VCCWN (CCW -)	56	ACCWN (CCW -)
7	WCWP (CW +)	57	BCWP (CW +)
8	WCWN (CW -)	58	BCWN (CW -)
9	WCCWP (CCW +)	59	BCCWP (CCW +)
10	WCCWN (CCW -)	60	BCCWN (CCW -)
11	VAP ( A +)	61	AAP ( A +)
12	VAN ( A -)	62	AAN ( A -)
13	VBP ( B +)	63	ABP ( B +)
14	VBN ( B -)	64	ABN ( B -)
15	VZP ( Z +)	65	AZP ( Z +)
16	VZN ( Z -)	66	AZN ( Z -)
17	WAP ( A +)	67	BAP ( A +)
18	WAN ( A -)	68	BAN ( A -)
19	WBP ( B +)	69	BBP ( B +)
20	WBN ( B -)	70	BBN ( B -)
21	WZP ( Z +)	71	BZP ( Z +)
22	WZN ( Z -)	72	BZN ( Z -)
23	GND	73	EXTGND3 (xSVCTRCL GND)
24	GND	74	EXTGND3 (xSVCTRCL GND)
25	VSVCTRCL( )	75	ASVCTRCL( )
26	WSVCTRCL( )	76	BSVCTRCL( )
27	VSVALM ( )	77	ASVALM ( )
28	VINPOS ( )	78	AINPOS ( )
29	VSVON ( ON )	79	ASVON ( ON )
30	VSVRST ( )	80	ASVRST ( )
31	WSVALM ( )	81	BSVALM ( )
32	WINPOS ( )	82	BINPOS ( )
33	WSVON ( ON )	83	BSVON ( ON )
34	WSVRST ( )	84	BSVRST ( )
35	EXTPOW2(+ V )	85	EXTGND2 (+24V GND)
36	EXTPOW2(+ V )	86	EXTGND2 (+24V GND)
37	+VELS (CW )	87	+AELS (CW )
38	-VELS (CCW )	88	-AELS (CCW )
39	VDLS ( )	89	ADLS ( )
40	VOLS ( )	90	AOLS ( )
41	+WELS (CW )	91	+BELS (CW )
42	-WELS (CCW )	92	-BELS (CCW )
43	WDLS ( )	93	BDLS ( )
44	WOLS ( )	94	BOLS ( )
45	EXTPOW1(+ V )	95	EXTPOW1 (+24V )
46	EXTPOW1(+ V )	96	EXTPOW1 (+24V )
47	+5V	97	GND
48	+5V	98	GND
49	CMPV (TTL OC )	99	CMPA (TTL OC )
50	CMPW (TTL OC )	100	CMPB (TTL OC )

3.4-2 J2

V B

### 3.4.3 J3

1	GND	2	GND
3	STA ( )	4	STP
5	GND	6	GND
7	CMP-X (X )	8	CMP-Y (Y )
9	CMP-Z (Z )	10	CMP-U (U )
11	GND	12	GND
13	SYNCA( )	14	SYNCB( )
15	MVC-X(X )	16	MVC-Z(Z )

3.4-3 J3

2.54

PS-16PE-D4 1 B1E(JAE)

PS-16SM-D4P1-1D(JAE)

### 3.5 HPCI-CPD578N/574N

	Á	8 (1)8 (2) 2 4 x2 (3) 2 x2	LSI PCL6045 ( ) CPD574N 4
	Á	-134,217,728 +134,217,727[ ]	
	Á	0.1 pps 6.5 Mpps( 0.1 100) 2 1/2 3 1/3 4 1/3	16bit(65535)
	Á	(1) (2)	
	Á	(1) ( ) (2) OFF	S 2.7ms 871s 5.4ms 1742s
	Á		
	Á	(OLS) Z ELS 13	
	Á	( ) ( ) } 4	
	Á	1,2 ± 3 5 } 5	
	Á /	/ 1 6.5 Mcps Max (x4 )	
	Á		
	Á		
	Á	(PCS)	
	Á		
	Á	±ELS OLS DLS(PCS, LTCH) A/B/Z /	
	Á	( ) SVALM, INPOS /	
	Á	2	
		4.8	
	Á	[CPD578N] 5V 0mA Max 3.3V 50mA Max	[CPD574N] 5V 300mA Max 3.3V 0mA Max
	Á	0 50	
	Á	175mm x 107mm	

.CPD574N V-B

3.5-1 HPCI-CPD578N/574N

## 4.

### 4.1 PCI

CPD578N		PCI						
31	24	23	16	15	8	7	0	
ID 1014h				ID 14a9h				00h
								04h
(06h)		(80h)		ID(02h)				08h
								0ch
BAR0:00000000 ( )								10h
BAR1:xxxxxxxh ( )								14h
BAR2: 00000000 ( )								18h
BAR3:CPD								1ch
BAR4: 00000000 ( )								20h
BAR5: 00000000 ( )								24h
CIS								28h
ID 1014h				ID 14a9h				2ch
								30h-3bh
				IRQ No.				3c
								40h-fch

4.1-1 CPD578N/574N PCI

### 4.2

	I/O (HEX)	BAR3		( )	3		(OUT)
PCL X ( 1 )	BAR3+00	MSTS			CMD		
	+02	SSTS			OTP		
	+04	BUF0	(15-0)		BUF0	OUT(15-0)	
	+06	BUF1	(31-16)		BUF1	OUT(31-16)	
PCL Y ( 2 )	+08	MSTS			CMD		
	+0a	SSTS			OTP		
	+0c	BUF0	(15-0)		BUF0	OUT(15-0)	
	+0e	BUF1	(31-16)		BUF1	OUT(31-16)	
PCL Z ( 3 )	+10	MSTS			CMD		
	+12	SSTS			OTP		
	+14	BUF0	(15-0)		BUF0	OUT(15-0)	
	+16	BUF1	(31-16)		BUF1	OUT(31-16)	
PCL U ( 4 )	+18	MSTS			CMD		
	+1a	SSTS			OTP		
	+1c	BUF0	(15-0)		BUF0	OUT(15-0)	
	+1e	BUF1	(31-16)		BUF1	OUT(31-16)	
PCL V ( 5 )	+20	MSTS			CMD		
	+22	SSTS			OTP		
	+24	BUF0	(15-0)		BUF0	OUT(15-0)	
	+26	BUF1	(31-16)		BUF1	OUT(31-16)	
PCL W ( 6 )	+28	MSTS			CMD		
	+2a	SSTS			OTP		
	+2c	BUF0	(15-0)		BUF0	OUT(15-0)	
	+2e	BUF1	(31-16)		BUF1	OUT(31-16)	
PCL A ( 7 )	+30	MSTS			CMD		
	+32	SSTS			OTP		
	+34	BUF0	(15-0)		BUF0	OUT(15-0)	
	+36	BUF1	(31-16)		BUF1	OUT(31-16)	
PCL B ( 8 )	+38	MSTS			CMD		
	+3a	SSTS			OTP		
	+3c	BUF0	(15-0)		BUF0	OUT(15-0)	
	+3e	BUF1	(31-16)		BUF1	OUT(31-16)	
	+80 +FF		4.3			4.3	

.CPD574N V~B

4.2-1 CPD578N

### 4.3 ( )

1

( n??? n \* )

.CPD574N V-B

#### 4.3.1 ELS (ELPOL)

Read/Write 80h

ELS

A				ELS				B				OFF ELS			
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
*	*	*	*	*	*	*	*	BELS	AELS	WELS	VELS	UELS	ZELS	YELS	XELS

7-0	nELS	0:nELS B (POW ON ),1:nELSA
-----	------	----------------------------

#### 4.3.2 DLS/PCS (DLS/PCS)

Read/Write 82h

DLS

PCS

DLS				PCS											
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
*	*	*	*	*	*	*	*	BPCS	APCS	WPCS	VPCS	UPCS	ZPCS	YPCS	XPCS

7-0	nPCS	0:nDLS(POW ON ),1:nPCS
-----	------	------------------------

#### 4.3.3 4 (STA) (C4STA)

Read/Write 84h

4

PCL

CPD

(STA)

4				PCL				CPD				(STA)			
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
*	*	*	*	*	*	*	*	BC4	AC4	WC4	VC4	UC4	ZC4	YC4	XC4

7-0	nC4	0:n 4 (STA) (POW ON )	1:n 4 (STA)
-----	-----	-----------------------	-------------

#### 4.3.4 5 (STP) (C5STP)

Read/Write 86h

5

PCL

CPD

(STP)

5				PCL				CPD				(STP)			
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
*	*	*	*	*	*	*	*	BC5	AC5	WC5	VC5	UC5	ZC5	YC5	XC5

7-0	nC5	0:n 5 (STP) (POW ON )	1:n 5 (STP)
-----	-----	-----------------------	-------------

4.3.5

3 5

CMP3 CMP4 CMP5

J1(X-U) J2(V-B) J3(X-U)

(1) X-U: CMP3-5

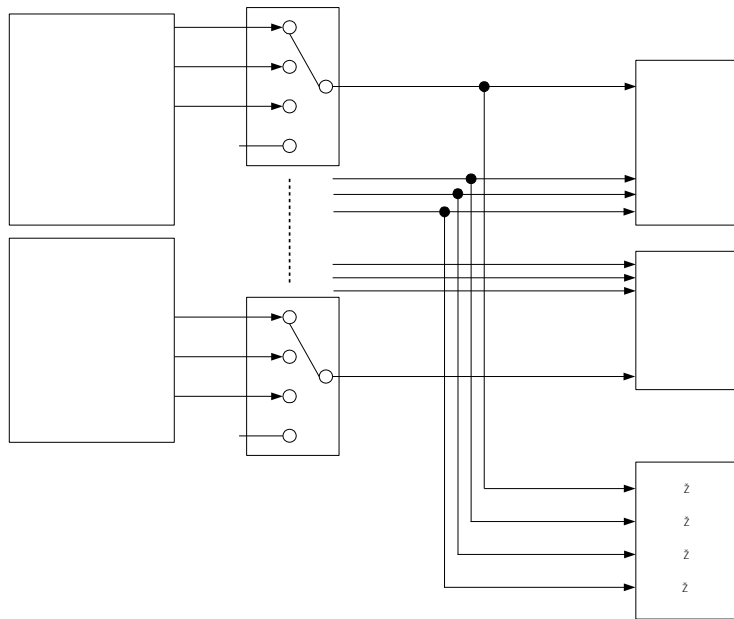
Read/Write		8ch														
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
*	*	*	*	*	*	*	*	*	UCP1	UCP0	ZCP1	ZCP0	YCP1	YCP0	XCP1	XCP0

7-0	nCP1-0	00:nCMP3 POW ON	01:nCMP4	10:nCMP5	11:
X-U		XCP1-0	CMP3		

(2) V-B: CMP3-5

Read/Write		8ch														
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
*	*	*	*	*	*	*	*	*	BCP1	BCP0	ACP1	ACP0	WCP1	WCP0	VCP1	VCP0

7-0	nCP1-0	00:nCMP3 POW ON	01:nCMP4	10:nCMP5	11:
V-B		VCP1-0	CMP3		



4.3-1

### 4.3.6 (BINTM)

Read/Write 90h (Windows )

PCI Bus															
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	BINTM

0	BINTM	0	( ) (POW ON ) 1	( )
---	-------	---	-----------------	-----

### 4.3.7 (BINTS)

Read 92h

PCL

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	BINTS

0	BINTS	0	1	POW ON
---	-------	---	---	--------

### 4.3.8 ID(BID)

Read 9ch

ID

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
*	*	*	*	*	*	*	*	*	*	*	*	BID3	BID2	BID1	BID0

3-0	BID3-0	ID	( =0)
-----	--------	----	-------

### 4.3.9 (SYNC\_C\_EN)

Read/Write 94h

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
*	*	*	*	*	*	*	V_EN	*	*	*	*	*	*	*	X_EN

0	X_EN	0: X-U	POW ON	1: X-U
8	V_EN	0: V-B	POW ON	1: V-B

### 4.3.10 X-U (XSYNC\_C)

Read/Write 96h

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
BSC1	BSC0	ASC1	ASC0	WSC1	WSC0	VSC1	VSC0	USC1	USC0	ZSC1	ZSC0	YSC1	YSC0	XSC1	XSC0

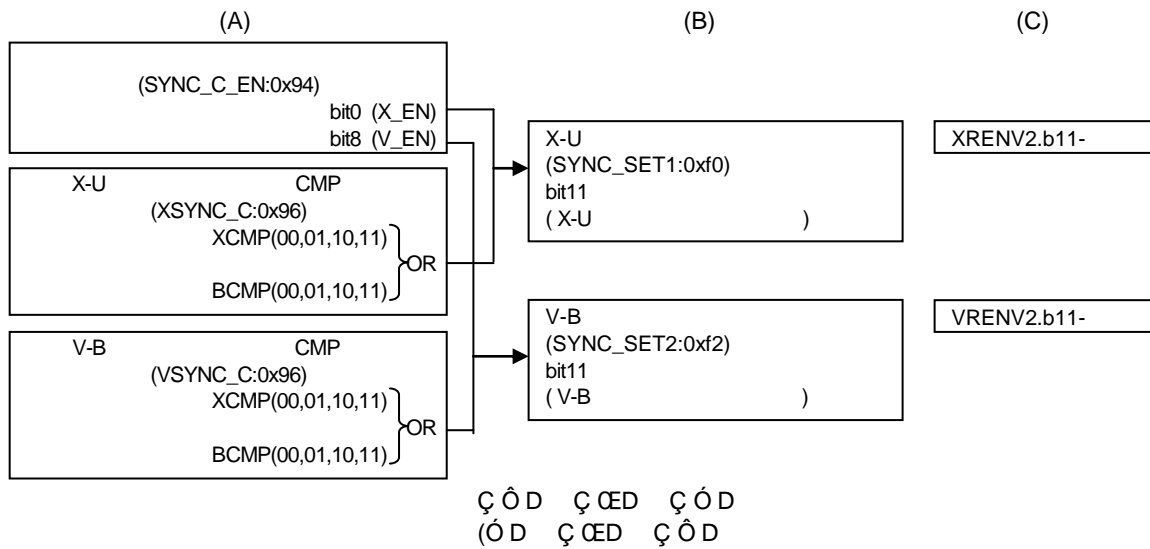
1-0	XSC1-0	00: POW ON	01: XCMP4	10: XCMP5	11: XCMP4 AND XCMP5
7-2	nSC1-0	00: POW ON	01:nCMP3 AND nCMP4	10:nCMP3 AND nCMP5	11:nCMP4 AND nCMP5 (n Y-U)
9-8	SC1-0	00: POW ON	01: VCMP4	10: VCMP5	11: VCMP4 AND VCMP5
15-10	nSC1-0	00: POW ON	01:nCMP3 AND nCMP4	10:nCMP3 AND nCMP5	11:nCMP4 AND nCMP5 (n W-B)

### 4.3.11 V-B

### (VSYNC\_C)

Read/Write		98h													
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
BSC1	BSC0	ASC1	ASC0	WSC1	WSC0	VSC1	VSC0	USC1	USC0	ZSC1	ZSC0	YSC1	YSC0	XSC1	XSC0

1-0	XSC1-0	00: POW ON	01: XCMP4	10: XCMP5	11: XCMP4 AND XCMP5
7-2	nSC1-0	00: POW ON	01:nCMP3 AND nCMP4	10:nCMP3 AND nCMP5	11:nCMP4 AND nCMP5 (n Y-U)
9-8	SC1-0	00: POW ON	01: VCMP4	10: VCMP5	11: VCMP4 AND VCMP5
15-10	nSC1-0	00: POW ON	01:nCMP3 AND nCMP4	10:nCMP3 AND nCMP5	11:nCMP4 AND nCMP5 (n W-B)



4.3-2

### 4.3.12

### (ENFIL)

Read/Write		a2h													
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
*	*	*	*	*	*	*	*	BFIL	AFIL	WFIL	VFIL	UFIL	ZFIL	YFIL	XFIL (L_PLS)

0	I_PLS	J3	0:50ns	(POW ON ) 1:
7-0	nFIL		0:50ns	(POW ON ) 1:

### 4.3.13 (J3\_SEL)

Read/Write		a4h													
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
*	*	*	*	*	*	*	*	*	*	*	J3 SYNC	J3V1	J3V0	J3X1	J3X0

1-0	J3X1,0	00:X X-U POW ON 10:B X-U J3SYNC=0 01: J3 SYNCA/B (J3SYNC=1 ) J3SYNC=1 11:
3-2	J3V1,0	00:V V-B POW ON 10:B V-B J3SYNC=0 01: J3 SYNCA/B V-B (J3SYNC=1 ) 11: Z V-B
4	J3SYNC	0: J3 SYNCA/B Z POW ON J3 SYNCA/B Z

### 4.3.14 (OPT\_RST)

Write a8h POW ON

### 4.3.15 1(BCODE)

Read c8h cah

c8h: HPCI-CPD5016 b7-0=50h, HPCI-CPD578N( HPCI-CPD578) b7-0=57h, 52h  
cah: HPCI-CPD5016 b7-0=16h, HPCI-CPD578N( HPCI-CPD578) b7-0=8ah, 54h

### 4.3.16 2(SUB\_CODE)

Read a8h

HPCI-CPD578N b7-0=08h HPCI-CPD574N b7-0=04h b7-0=ffh.

### 4.3.17 X-U (SYNC\_SET1:0xf0)

15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0  
 SPW3|SPW2|SPW1|SPW0|C5XS|SPDR|SPM1|SPM0|SYEU|SYEZ|SYEY|SYEX|SBMS|SBME|SMD1|SMD0

1-0	SMD1-0	00: 01: 10: 2 11:
2	SBME	/ 0: 1:
3	SBMS	0: 1:
4	SYEX	X 0: 1: ( )
5	SYEY	Y 0: 1:
6	SYEZ	Z 0: 1:
7	SYEU	U 0: 1:
9-8	SPM1-0	(X ) / 00:90 1 (A ) 01:90 2 ( ) 10:90 4 ( ) 11:A B
10	SPDR	1:
11	C5XS	/ 1:
15-12	SPW3-0	0000:0.25us, 0001:0.5 us, 0010:0.75us, 0011:1.0 us, 0100:1.25us, 0101:2.5 us, 0110:5.0 us, 0111:7.5 us, 1000:25 us, :0.05us

### 4.3.18 V-B (SYNC\_SET2:0xf2)

15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0  
 SPW3|SPW2|SPW1|SPW0|C5XS|SPDR|SPM1|SPM0|SYEB|SYEA|SYEW|SYEV|SBMS|SBME|SMD1|SMD0

1-0	SMD1-0	00: 01: 10: 2 11:
2	SBME	/ 0: 1:
3	SBMS	0: 1:
4	SYEV	V 0: 1: ( )
5	SYEW	W 0: 1:
6	SYEA	A 0: 1:
7	SYEB	B 0: 1:
9-8	SPM1-0	(V ) / 00:90 1 (A ) 01:90 2 ( ) 10:90 4 ( ) 11:A B
10	SPDR	1:
11	C5XS	/ 1:
15-12	SPW3-0	0000:0.25us, 0001:0.5 us, 0010:0.75us, 0011:1.0 us, 0100:1.25us, 0101:2.5 us, 0110:5.0 us, 0111:7.5 us, 1000:25 us, :0.05us

#### 4.3.19 X-U (SYNC\_MON1:0xf4 Read Only)

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
									PMSK						
5-0															
6	PMSK	1:													
7															

#### 4.3.20 V-B (SYNC\_MON2:0xf6 Read Only)

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
									PMSK						
5-0															
6	PMSK	1:													
7															

#### 4.4 PCL

CPD578N CPD578

##### 4.4.1 RMD(PRMD)

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
	PCS		0	CTR 1DIS	acc	INPSE	DLSE	M O D							
31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
0	0	MSDC	0	1	FH										SEQNo
7-0	MOD	( )													
		02h: DR 56h: DR													
29	MSDC	( )													
		0:													

##### 4.4.2 RENV1

15			12	11			8	7			4	3			0
ERCTL	EPW2	EPW1	EPW0	ERCTO	ERCTE	ALML	ALMM	OLL	SDL	SDLT	SDM	ELM	PMD2	PMD1	PMD0
31			28	27			24	23			20	19			16
0	0	INTM	DTMF	DRF	FLTR	DR	PCS	LTC	INPS	CLR1	CLR0	CSTP	CSTA	ETW1	ETW0
23	LTC	DLS/PCS(82h) PCS													
		LTC 0:OFF ON 1:ON OFF													
25	DR	( )DR 0:B 1:A													

#### 4.4.3 RENV2

15	1	1	1	1	12	11	8	7	4	3	0				
1	1	1	1	P5M1	P5M0	0	1	0	1	P2M1	P2M0	0	1	0	1
31	28	27	24	23	20	19	16								
POFF	EOFF	SMAX	PMSK	0	PDIR	PULSR	EZL	EDIR	ENCM	0	0	0	0		

5-4	P2M1-0	(X,Z ) J3 MVC-X MVC-Z 00: 01: ( MVC ) 10: Low 11: High
11-10	P5M1-0	(X,V ) 00: 11

#### 4.4.4 RENV5

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
0	CT LCHF	CTLCH	PDSM	IDLP	CMP5M	CMP5 D	CMP5 C								
31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
0	0	0	0	CU4L	CU3L	CU2L	CU1L	0	0	TRIGR INsel	TRIGR OTsel				

11	PDSM	1:PA/PB DR ( ELS ) 0: PA/PB DR ( ELS )
13-12	CTLCH	CTR 00:LTCH(DLS ) ( DLS/PCS(82h) PCS ) 01:OLSoFF on 10:CMP4 11:CMP5

#### 4.4.5 RIRQ

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
IROL	ISLT	0	IRC5	IRC4	IRC3	IRC2	IRC1	IRDE	IRDS	IRUE	IRUS	IRND	IRNM	IRN	IREN
31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
0	0	0	0	0	0	0	0	0	0	0	0	0	IRSA	IRDR	IRSD

14	ISLT	1:LTCH ( DLS/PCS(82h) PCS )
17	IRDR	1:±DR OFF ON ( )

#### 4.4.6 RSTS

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
SDIN	SLTC	*	SDRM	SDRP	SEZ	SERC	SPCS	SEMG	SSTP	SSTA	SDIR	CND3	CND2	CND1	CND0	
31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	
0	0	0	0	0	0	0	0	0	0	0	PFM1	PFM0	PFC1	PFC0	0	SINP

3-0	CND3-0	0000: <b>0001:DR</b> ( ) 0010:STA 0011: 0100: 0101:SVCTRCL 0110: 0111: /	1000: 1001:FA 1010:FL 1011: 1100:FH 1101: 1110:INPOSon 1111:
11	SDRP	1:+DRon( )	
12	SDRM	1:-DRon( )	
14	SLTC	1:LTCHon( DLS/PCS(82h) PCS )	

#### 4.4.7 RIST

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
IROL	ISLT	0	IRC5	IRC4	IRC3	IRC2	IRC1	IRDE	IRDS	IRUE	IRUS	IRND	IRNM	IRN	IREN	
31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	
0	0	0	0	0	0	0	0	0	0	0	0	0	IRSA	IRMD	IRPD	IRSD

14	ISLT	1:LTCH ( DLS/PCS(82h) PCS )													
17	IRPD	1:+DR OFF ON ( )													
18	IRMD	1:-DR OFF ON ( )													

#### 4.5 PCL

##### 4.5.1 MVC

J3 MVC (X Z )  
 12h:MVCON(Low)  
 1ah:MVCOFF(High)

**4.6**

1 4 LSI PCL  
 (1)  
 (2) 1 2 4  
 (3) 2

(PTP)

(1) X Y  
 (2) XY ZU  
 (3) XYZ U  
 8 4 LSI 2 (X U V B )  
 5-8

( )

		X-U	V-B	
1			1-4	
2		2-4		5-8 ( )
3				
4		( )		

4.6-1 CPD578N

**4.7**

**4.7.1**

1		2
2		
3		
4		
5		
6		
7		(J3 )
8		( )

4.7-1

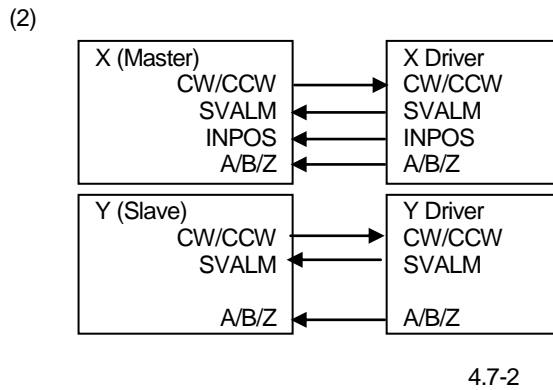
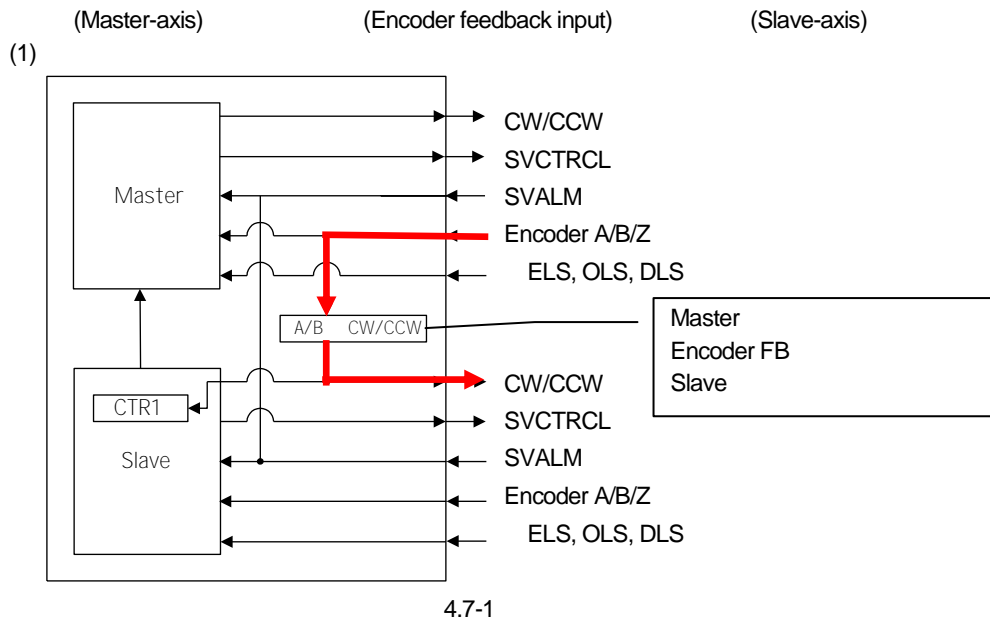
**4.7.2**

3

	X Y U		
	V W B		
2	X X Y Z U)		
	V V W A B)		
	Z U	U B	X B

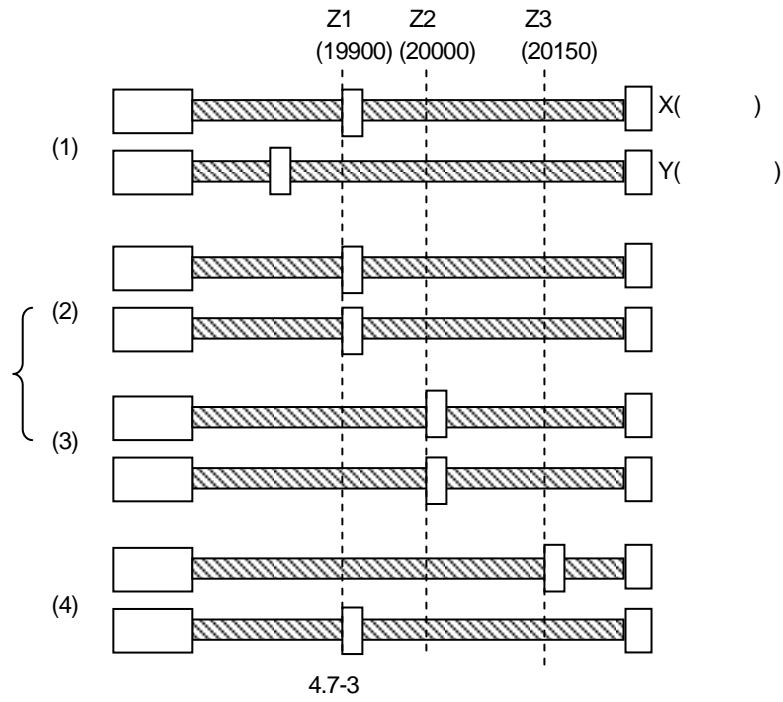
4.7-2

4.7.3



- |   |                           |
|---|---------------------------|
| <ol style="list-style-type: none"> <li>SVALM</li> <li>Error-stop(Stop by ELS, SVALM)<br/>bit25=1(STP Output by error-stop)</li> </ol> | RMD bit24=1(Stop by STP), |
|---|---------------------------|

(3)



(1) (4)	(RMD)		(3) (4)
X	(1) (2)	(2) (3)	(41h)
Y	(41h)	(01h)	(41h)

(2) (3)

(4)

RENV2	0320fd45h	0320fd55h	EA/EB:4, PA/PB:UP/DOWN
RENV5	00000000h	00000800h	Y ELS RMD 25=1 STP
SYNC_SET1 (f0h)		7221h	, Y Slave 90° 4 Y 7.5us(66.6kpps)

(5)

X

(6)

(7)

1. Z1 Y
2. Y Z1
3. X Z2
4. X Z2
- 5.

(8)

X

Y

F • ^ &

#### 4.7.4

##### 4.7.3

(1)

	X	Y		
RENV2	0320f145h	0320fd55h		EA/EB:4 , PA/PB:UP/DOWN, <b>X</b> (b11,10=00),
RENV4	11000000h	00000000h		XCMP4 CMP4->CTR2
RENV5	00000000h	00000800h		Y ELS RMD 25=1 STP
CMP4	20000			XCMP4=20000 XCTR2=20000
SYNC_C(94h)			0001h	X
XSYNC_C(96h)			0001h	XCMP4
SYNC_SET1(f0h)			7A21h	,Y 90° 4 Y 7.5us(66.6kpps )

(2)

X

(3)

(4)

1. Z1 Y
2. Y Z1
3. X Z3 .X Z2 Y
4. Y

(5)

```
#define DEF_RENV2 0x0320fd55 // Environmental-Setting-2

//
// slave | Y:1, Z:2, U:3
// enbl | Enable:1, Disable:0
// cmpdata | Comparator Data
DWORD cpd_set_sync_xenc( DWORD hDev, WORD slave, WORD enbl, long cmpdata )
{
    DWORD ret = 0;
    WORD sync_set1[4] = {0x6a11,0x6a21,0x6a41,0x6a81}, // Enable Master-Slave Area Function
    sync_set2[4] = {0x6211,0x6221,0x6241,0x6281}, // Enable Master-Slave Area Function
    prt = 0;

    if(( slave == 1 ) || ( slave == 2 ) || ( slave == 3 )) {
        if( enbl == 1 ) {
            prt = sync_set1[slave]; // Enable Master-Slave Area Function
        } else {
            prt = sync_set2[slave]; // Disable Master-Slave Area Function
        }
    } else {
        return ILL_PRM;
    }
}

//
```

```

//
EnterCriticalSection(&gCrs);
ret |= cp530_wReg ( hDev, slave, WRIRQ, 0 );
if( enbl == 1 ) {
    ret |= cp530_wReg ( hDev, X_AX, WRCMP4, cmpdata ); // Enable Master-Slave Area Function
    ret |= cp530_wReg ( hDev, slave, WRENV2, DEF_RENV2 ); // Set Master-Slave Area Comparator Data
    ret |= cp530_wPortW( hDev, SYNC_C_EN, 0x0001 ); // (A) Enable Master-Slave Area Function
    ret |= cp530_wPortW( hDev, XSYNC_C, 0x0001 ); // (B) Set Master-Slave Area Comparator(CMP4)
    // (B) Enable Master-Slave Area Function
}
ret |= cp530_wPortW( hDev, SYNC_SET1, prt ); // (C) Set Master-Slave Function

// Set Handle Mode (for count of CTR1)
ret |= cp530_wReg( hDev, slave, WPRMD, 0x03000001 );
ret |= cp530_wReg( hDev, slave, WPRFH, 0xffff );
ret |= cp530_wCmdW( hDev, slave, STAFH );
LeaveCriticalSection(&gCrs);

return (ret);
}

```

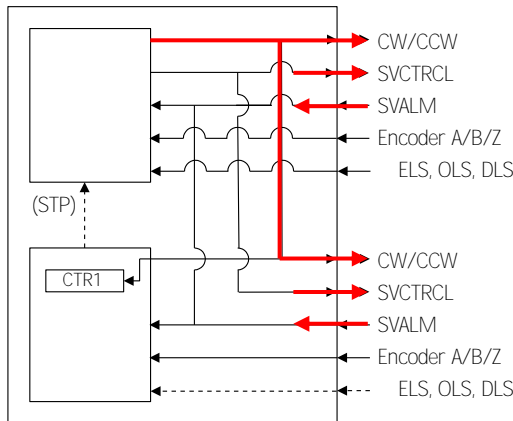
(6)

		10001,		10000<XCTR2	(X = )
XCTR2=10001					
XCTR2	10001	20000		10001	20000
(X )	20000	10001		20000	10001
		OFF		10000	(X ) 10000
			(X ) 10001	10000	1
				OFF	

#### 4.7.5 2

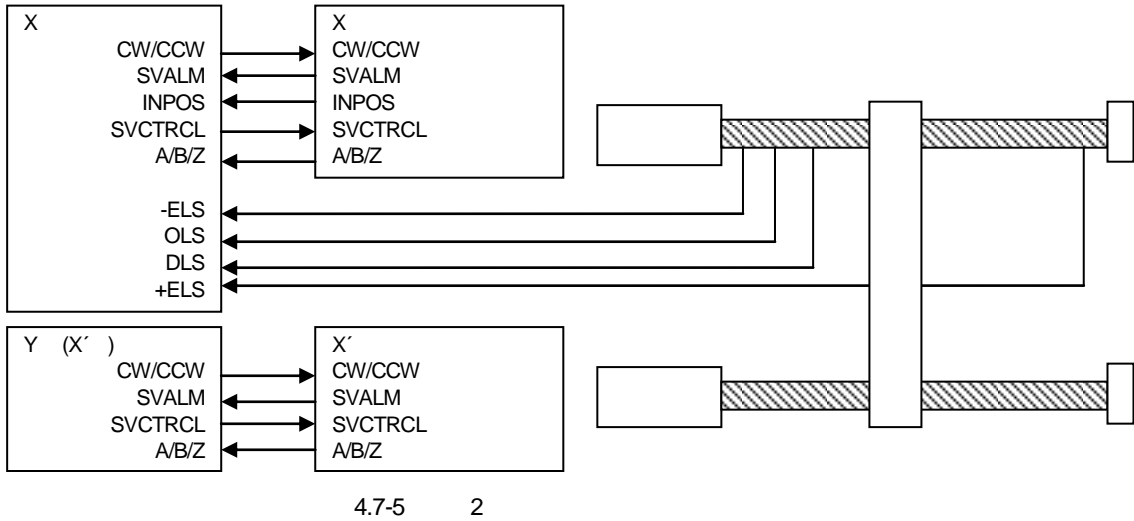
(Master-axis) (Slave-axis)

(1)



4.7-4 2

(2)



(3)

	X	Y		
RENV1	xxxxxxx4h	xxxxxxx4h		
RENV2	0320fd55h	0320fd55h		PA/PB:UP/DOWN
SYNC_SET1			0022h	2 ,X Y

(4)

```

X
SVALM X,Y
X,Y SVALM Y SVALM X SVALM X SVALM

```

(5)

```

X Z CTRCL X Y

```

(6)

```

X PRMV PRMD
Y PRMD 6-0 01h
X Y 0x03xxh

```

(7)

```

#define SYNC_SET1 0xf0 // HPCI-CPD578N X-U Master-Slave Function

// Initialization
Other necessary coding
// RENV2.bit25-24=11 (PA/PB:UP/DOWN)
cp530_wReg ( hDev, X_AX, WRENV2, 0x0320fd55 ); // Set XRENV2
cp530_wReg ( hDev, Y_AX, WRENV2, 0x0320fd55 ); // Set YRENV2
cp530_wPortW( hDev, SYNC_SET1, 0x0022 ); // Parallel Axis Control Mode, Y:Slave

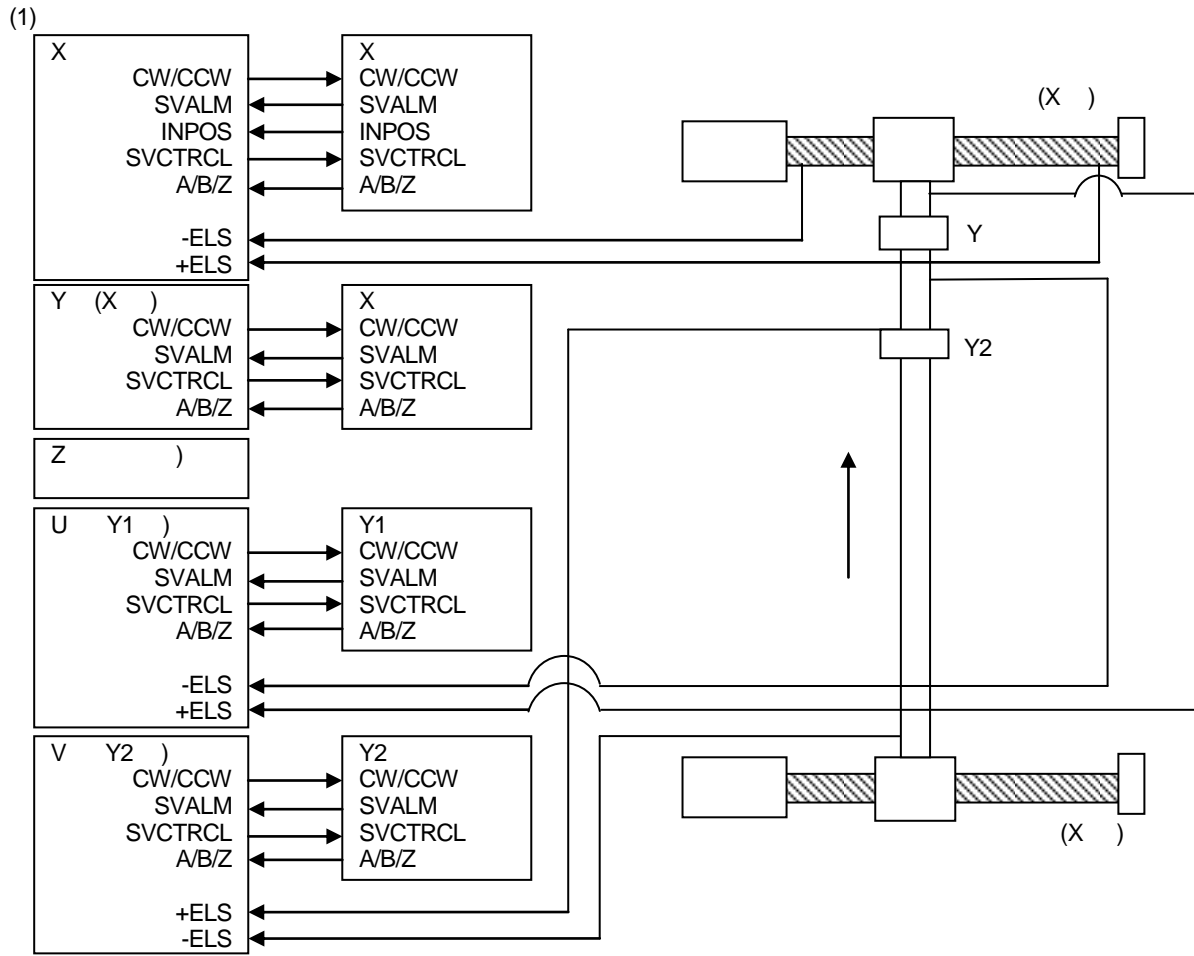
// X Y X

```

### 4.7.6

(Sub-Master-axis)

(Slave-axis)



(2)

	X	Y	Z	U	V		
RENV2	0320fd55h	0320fd55h	0320fd55h	0320fd55h	0320fd55h		PA/PB:UP/DOWN
RENV5				00000800h	00000800h		U,V ELS
SYNC_SET1 (f0h)						30a6h	2 X Y 2 :Z U 1us(500kpps)
SYNC_SET2 (f2h)						3013h	V V 1us(500kpps)

(3)

XY 2  
XY Z X Z

(4)

XY 2  
Z U V

(5) XY Z(U V)

1. X PRMV PRMD PRMD.MOD(bit7-0)
2. Y PRMD.MOD(bit7-0) 01h (CTR1 )
3. Z PRMV PRMD PRMD.MOD(bit7-0)
4. U,V PRMD.MOD(bit7-0) 01h( )  
PRMD.bit24=1(STP ) PRMD.bit25=1( STP )
5. SYNC\_SET1 SYNC\_SET2
- 6.
7. X Y Z ( 0x07xxh)

## 4.8

2.5

### 4.8.1

(EXYPOW1) (EXTPOW2) +24V +12V +5V  
EXTPOW1 EXTPOW2

### 4.8.2

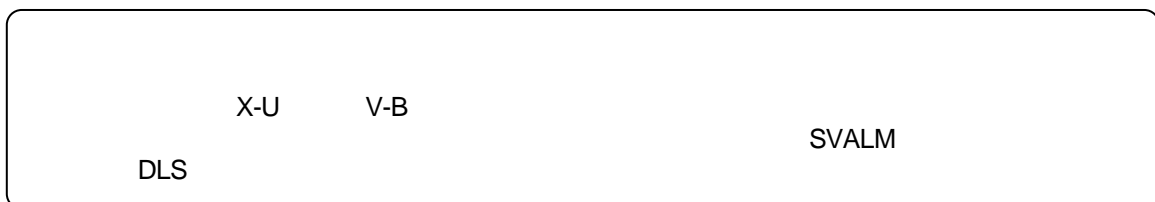
XSVALM VSVALM XDLS VDLS  
(CPD574N V-B )

EMG J1 (X-U ) XSVALM XDLS  
J2 (V-B ) VSVALM VDLS  
EMG EMG ( SVALM DLS )

EMG B ( OFF EMGon)

J1 EMG X Y Z U EMG X Y Z U  
J2 EMG V W A B EMG V W A B

EMG ERST.bit9(ESEM)="1"  
MSTS.bit4(SERR)="1"  
RSTS.bit7(SEMG) (1:EMGon 0:EMGoff)



### 4.8.3 JOG (JOG)

JOG XZ V A +DR  
 YDLS X Z V A -DR  
 ZDLS Y U W B +DR  
 UDLS Y U W B -DR  
 (CPD574N V~B )

XDLS X Z V A +DR  
 YDLS X Z V A -DR  
 ZDLS Y U W B +DR  
 UDLS Y U W B -DR

1 PCL.RENV1.DR(bit25)

"0" B "1" A

(8)

DRon +DRon + -DRon -  
 ELSon (RENV5.bit11=1)  
 (49h) ( DR )  
 (53h) DRoff  
 DR ON

(9)

DRoff on RMV "0"  
 DR RMV  
 +DRon + -DRon -  
 ELSon  
 +DR -DR ON

(1)

(2) PCL.PRMD.MOD(bit7-0)

02h: 56h:

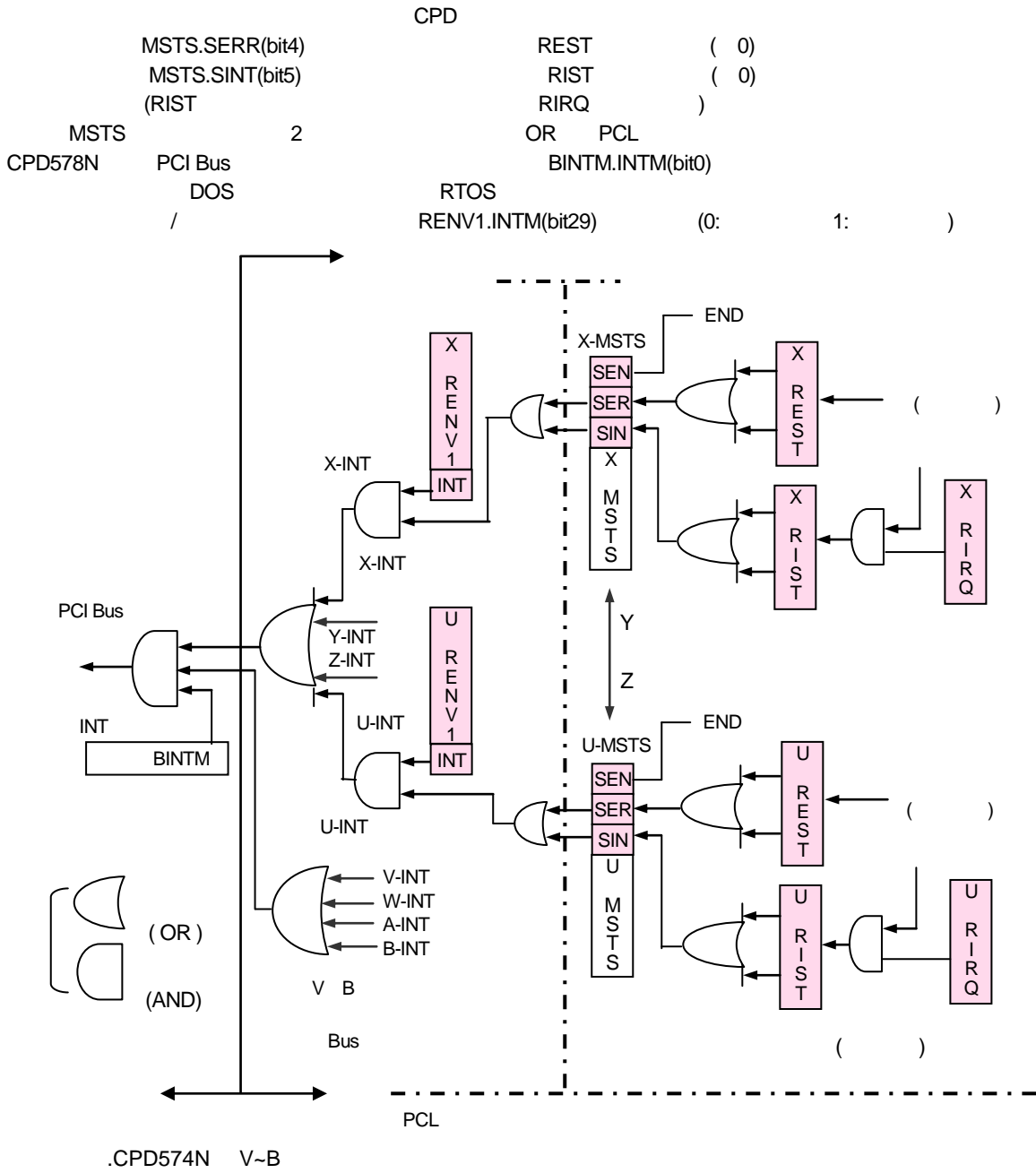
(3) (50h 51h 53h)

RSTS.CND(bit3-0)) "0001 DR "

+DR/-DRon

DR RSTS.bit11(SDRP) RSTS.bit12(SDRM)  
 (1:DRon 0:DRoff)

4.9



4.9-1 CPD578N/574N

## 5.

### 5.1

Windows

	ID	
(VC VB VC# Delphi		)
(exe )		
	CPD5016	CPD

### 5.2

#### OS

OS

Windows 7, Windows Vista, Windows XP, Windows 2000, Windows NT4.0, Windows 98 Second Edition

OS

### 5.3

(1)

Windows	OS	
Windows 7(64 )	(Win7(x64) )	hc530x64.sys
Windows Vista (64 )	(WinVista(x64) )	hc530x64.sys
Windows 7(32 )	(Win7 )	hc530wdm.sys
Windows Vista (32 )	(WinVista )	hc530wdm.sys
Windows XP	(WinXP )	hc530wpx.sys
Windows 2000	(Win2K )	hc530w2k.sys
Windows NT4.0	(WinNT )	hicpd530.sys
Windows 98SE	(Win98 )	hicpd530.vxd

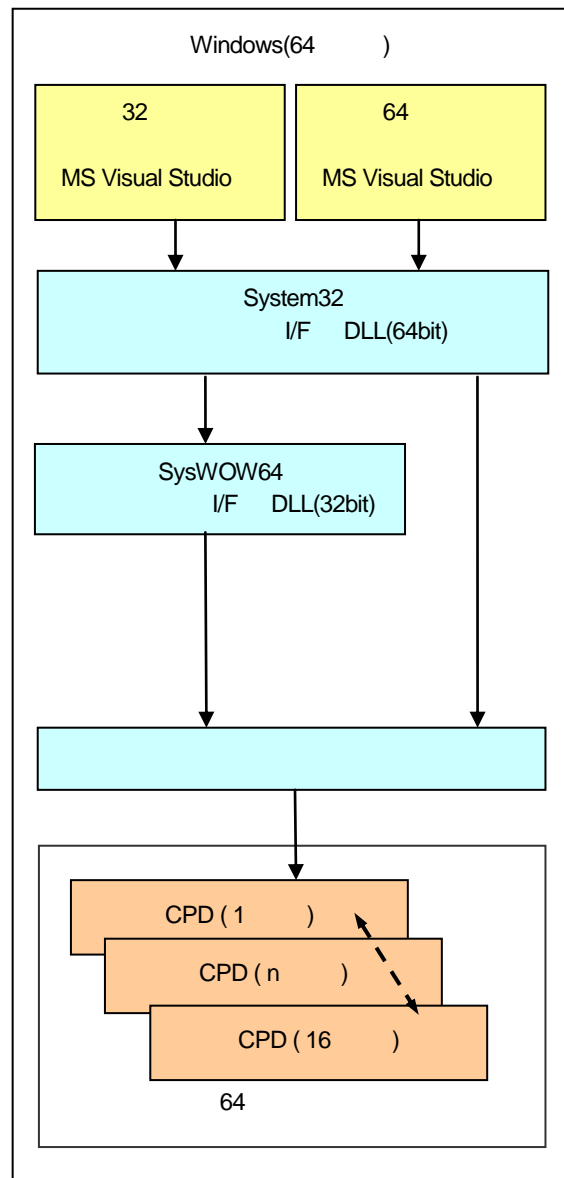
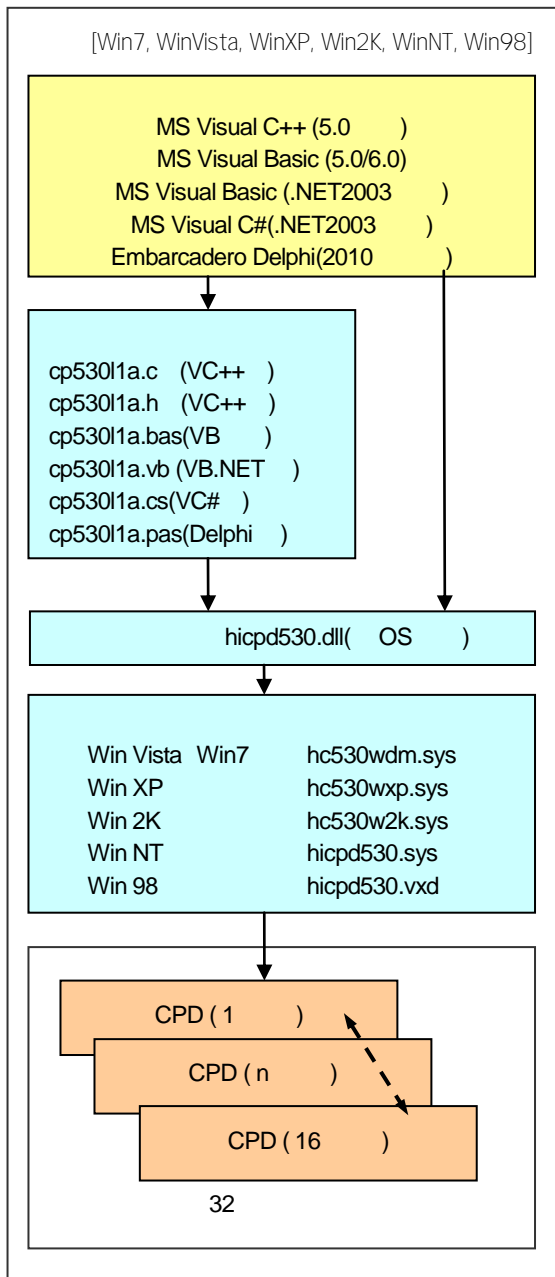
(2)

/

Windows		
hicpd530.dll( OS		)

(3)

Windows	
cp530l1a.c(cp530l1a.h)	Microsoft Visual C++ (5.0 )
cp530l1a.bas	Microsoft Visual Basic (5.0/6.0)
cp530l1a.vb	Microsoft Visual Basic(.NET2003 )
cp530l1a.cs	Microsoft Visual .C#
cp530l1a.pas	Embarcadero Delphi 2010

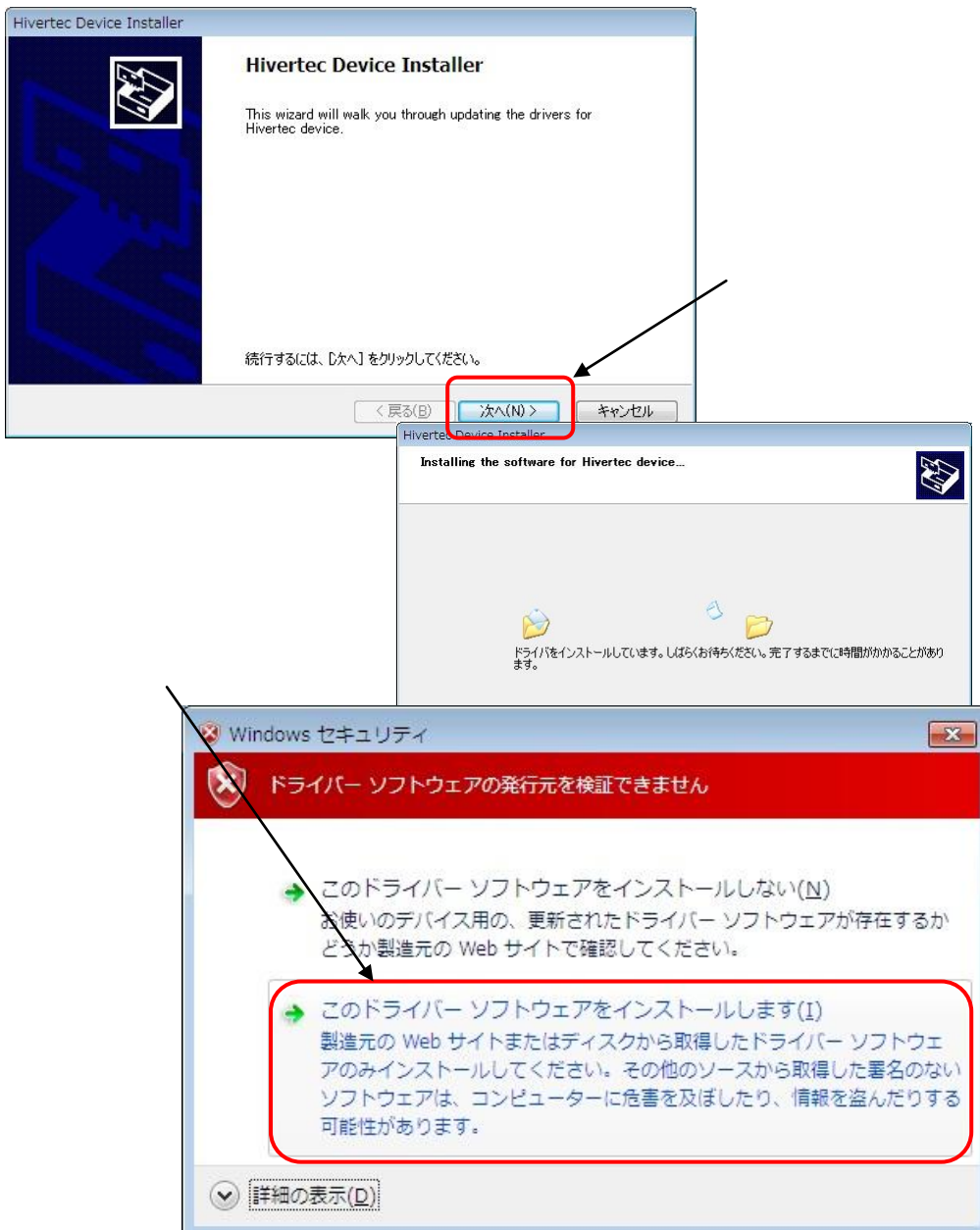


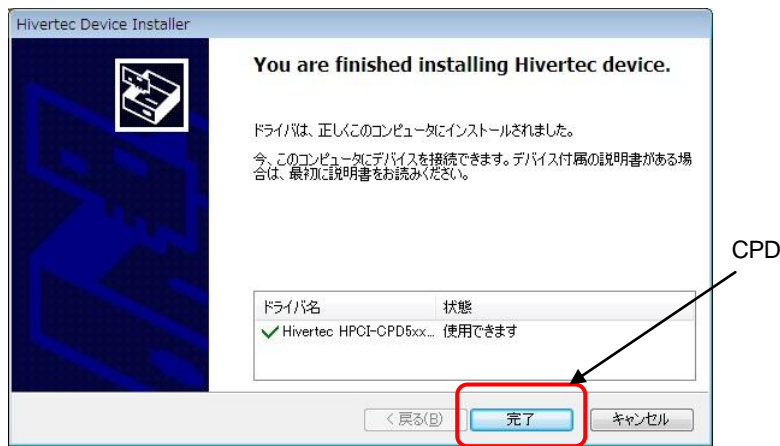
5.3-1

## 5.4

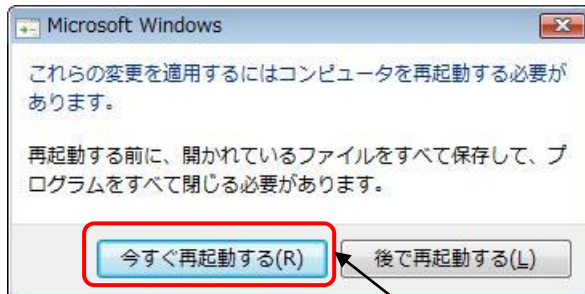
### 5.4.1 Windows

(1) Windows7(32 ) WindowsVista(32 )  
CPD PCI ON Windows  
CD :¥win7\_x86¥dpinst.exe  
"dpinst.exe"  
OFF CPD PCI  
ON Windows





Windows



5.4-1 Win7,WinVista

(2) Windows7(64 ) WindowsVista(64 )  
 CPD PCI ON Windows  
 CD :¥win7\_x64¥dpinst.exe  
 "dpinst.exe"  
 OFF CPD PCI  
 ON Windows

(3)WindowsXP

OFF CPD PCI  
 ON Windows  
 WinXP CPD

Hivertec HPCI-CPD530(WinXP)  
 Windows

WinXP

**新しいハードウェアの検出ウィザード**

新しいハードウェアの検索ウィザードの開始

このウィザードでは、次のハードウェアに必要なソフトウェアをインストールします:  
 (ほかの PCI Bridge デバイス)

ハードウェアに付属のインストール CD またはフロッピー ディスクがある場合は、挿入してください。

インストール方法を選んでください。

ソフトウェアを自動的にインストールする (推奨) (D)

一覧または特定の場所からインストールする (詳細) (S)

続行するには、[次へ] をクリックしてください。

< 戻る (B)      キャンセル

---

**新しいハードウェアの検出ウィザード**

下の一覧からハードウェアに最適なソフトウェアを選んでください。

Hivertec HPCI-CPD530(WinXP)

説明	バージョン	製造元	場所
Hivertec HPCI-CPD530(WinXP)	3.2.0.0	Hivertec	e:\winxp\hpc530wxp.inf
Hivertec HPCI-CPD530(WDM)	3.2.0.0	Hivertec	e:\winvista\hpc530wdm.inf
Hivertec HPCI-CPD530(Win9x)	3.2.0.0	Hivertec	e:\win9x\hpc530.inf
Hivertec HPCI-CPD530(Win2k)	3.2.0.0	Hivertec	e:\win2k\hpc530w2k.inf

**!** このドライバはデジタル署名されていません。  
 ドライバの署名が重要な理由

< 戻る (B)      キャンセル

---

**新しいハードウェアの検出ウィザード**

新しいハードウェアの検索ウィザードの完了

次のハードウェアのソフトウェアのインストールが完了しました:

Hivertec HPCI-CPD530(WinXP)

このコンピュータを再起動するまで、インストールしたハードウェアは正しく動作しません。

[完了] をクリックするとウィザードを閉じます。

< 戻る (B)      キャンセル

---

**ハードウェアのインストール**

**!** このハードウェア:  
 Hivertec HPCI-CPD530(WinXP)

を使用するためにインストールしようとしているソフトウェアは、Windows XP との互換性を検証する Windows ログ テストに合格していません。  
 (このテストが重要である理由)

インストールを続行した場合、システムの動作が損なわれたり、システムが不安定になるなど、重大な障害を引き起こす要因となる可能性があります。今すぐインストールを中断し、Windows ログ テストに合格したソフトウェアが入手可能かどうか、ハードウェア ベンダーに確認されることを、Microsoft は強くお勧めします。

インストールの停止 (S)

---

**システム設定の変更**

新しいデバイスのインストールが完了しました。デバイスをサポートするソフトウェアによりコンピュータを再起動する必要があります。新しい設定を有効にするには、コンピュータを再起動する必要があります。

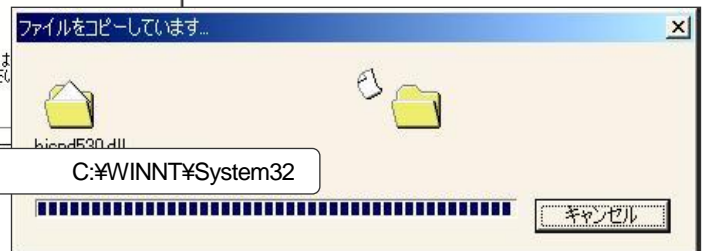
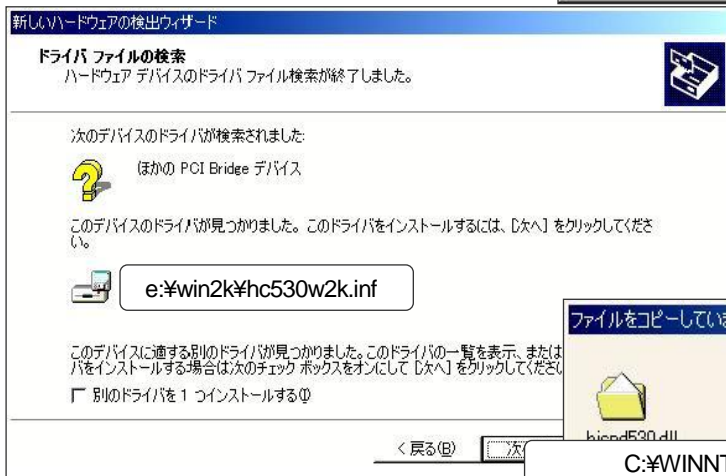
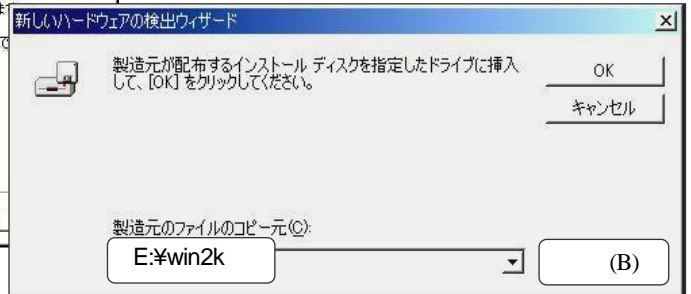
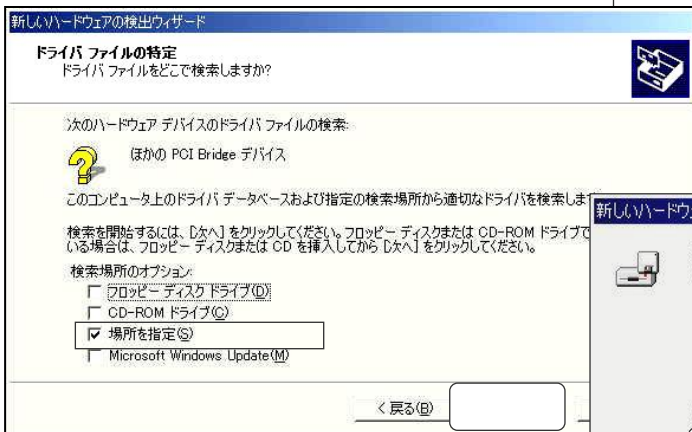
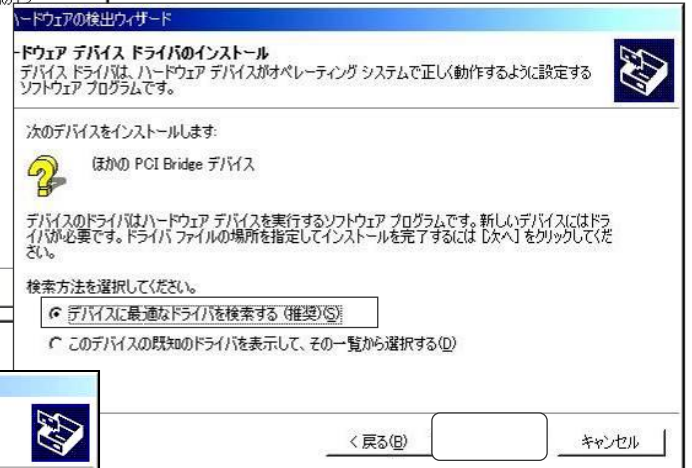
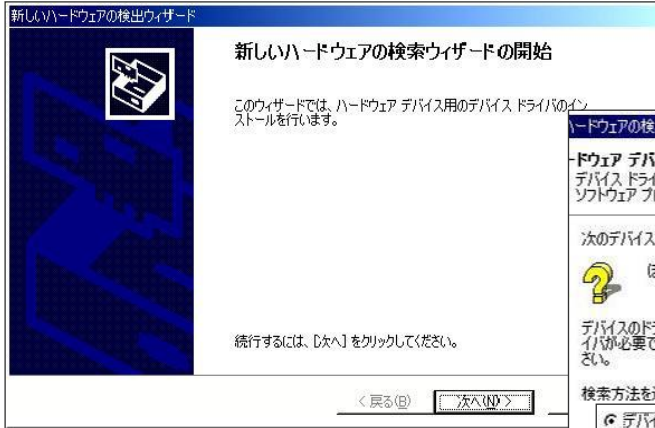
今すぐ再起動しますか?

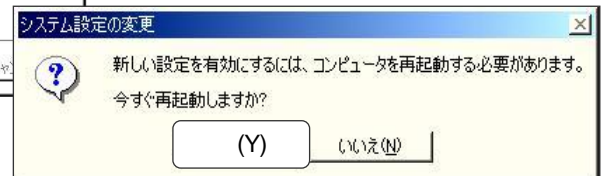
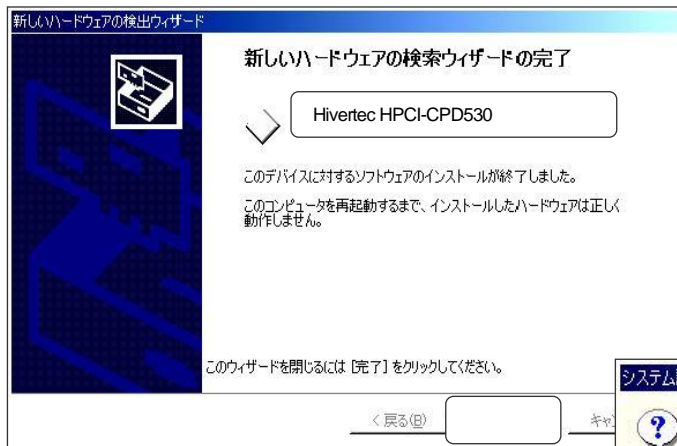
はい (Y)      いいえ (N)

5.4-2 WinXP

(4)Windows2000

OFF CPD PCI  
 ON Windows  
 Win2K CPD  
 CD :¥WIN2K





5.4-3 Win2K

(5) Windows 4.0

CD

CD :%WinNT%c530inst.inf

CD :%WinNT%c530inst.bat



5.4-4 WinNT

WinNT

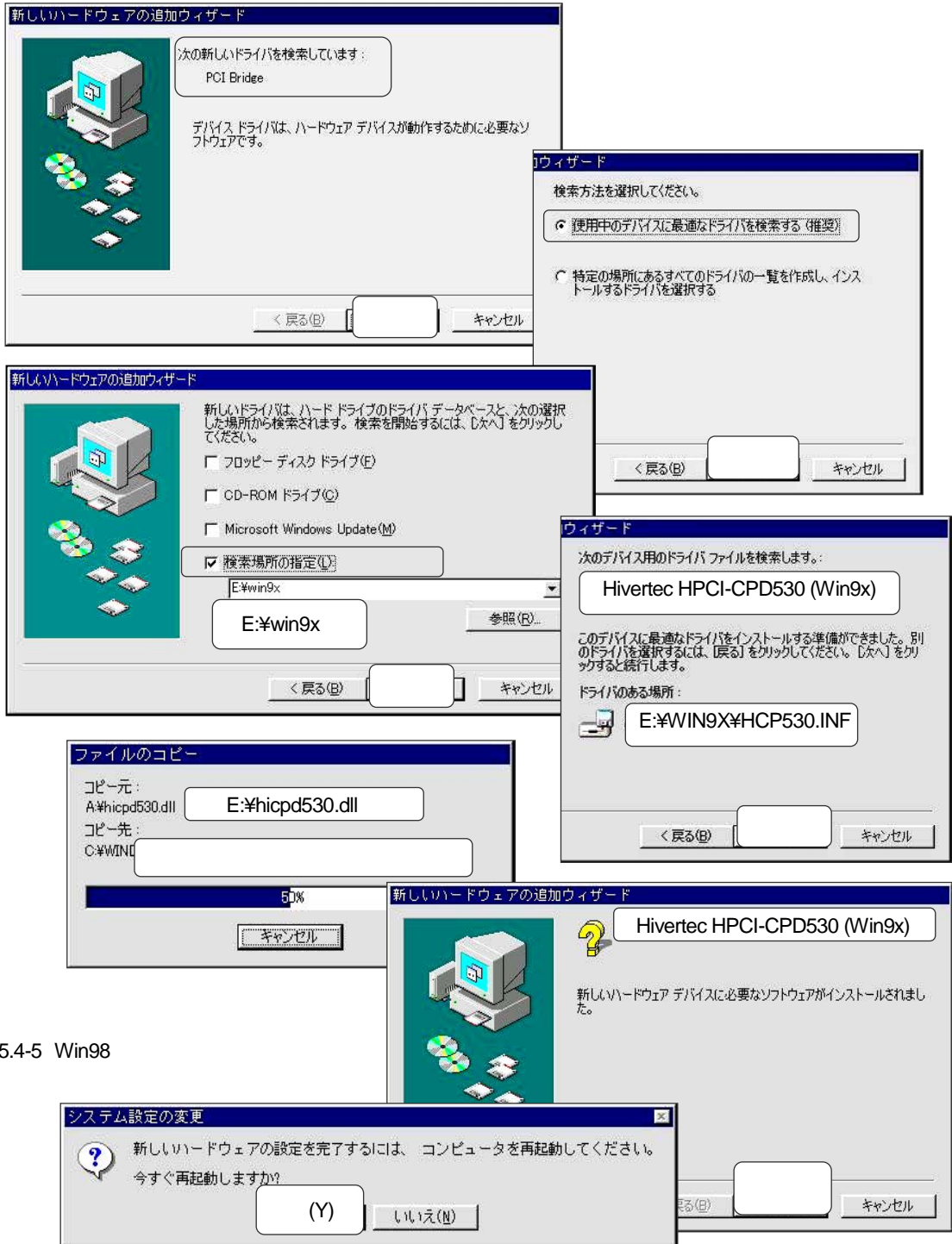
CPD

Hivertec HPCI-CPD530)

Hivertec HPCI-CPD530

(6)Windows98

Win98      OFF      CPD      PCI  
             ON      Windows  
             CPD  
 CD      :¥Win9x      CD



5.4-5 Win98

(7) WindowsXP 2000 NT4.0 98SE

CD :%cp530uin.exe  
 CD :%cp530uin.exe



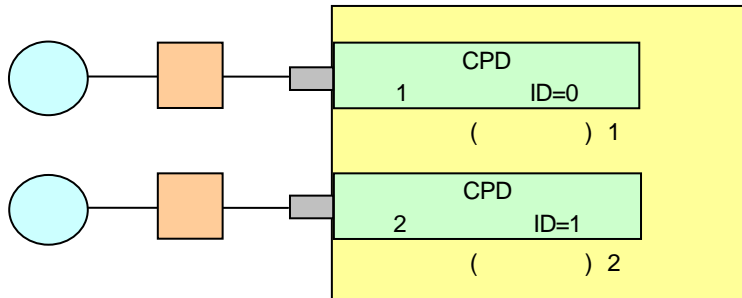
5.4-6

(8) Windows7 Windows Vista

Windows  
 Windows Hivertec HPCI-CPD5xx

5.5

CPD 1



5.5-1

(1) PCI ID

CPD ID

(2) ID  
 ID No.0-15

CPD(CPD5016 CPD508 CPD578 CPD578N CPD574N CPD534 CPD532 ) 16

5.6

CPD CPD ,  
 , I/O IRQ ,

## 5.6.1

```

                                HPCDEVICEINFO                                16
VC
typedef struct _HPCDEVICEINFO {
    DWORD nBusNumber; /* */
    DWORD nDeviceNumber; /* */
    DWORD dwIoPortAddress; /* I/O */
    DWORD dwIrqNo; /* IRQ */
    DWORD dwNumber; /* */
    DWORD dwBoardID; /* ID(0 15) */
} HPCDEVICEINFO, *PHPCDEVICEINFO
.                                Windows98                                INVALID_HPC_NUMBER(ffffffffh)
```

## 5.6.2

(1)

```

                                CPD
[                                ]

                                CPD
CE cp530_GetDeviceCount()
CE cp530_GetDeviceInfo()

                                CPD
                                CPD
CE cp530_OpenDevice()

                                CPD
                                CPD
CE cp530_wPortB()

[                                ]

                                CE cp530_CloseDevice()
```

(2)

```
CPD
[ ]
    CPD
    CE hcp530_GetDevInfo()
        2
    CPD
    CPD
    , CPD
    ,
    2
    CE hcp530_DevOpen()

[ ]
    ( )
    CE hcp530_DevClose()
```

### 5.6.3

```
> ±ELS
>
> OLS Z
> INPOS

> " " " " ?
> " " " " ?
```

## 5.7 Windows

(E:\test\Release\ipc53000.exe

1. CPD 2

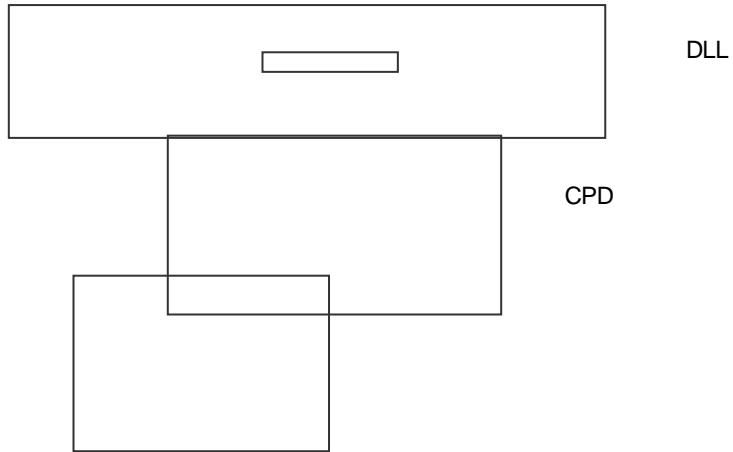
ID

ID

ID

2.

3.



5.7-1

# 5.7.1

## 5.7.2 (1)

[HWT] HPCI-CPD530 Series 動かしてみる  
X-U軸動作画面 | X-U軸設定画面 | V-B軸動作画面 | V-B軸設定画面

バス番号 : 0      デバイス番号 : 12  
 I/Oアドレス : 7000h      IRQ番号 : 11  
 管理番号 : -1      ボードID : 0

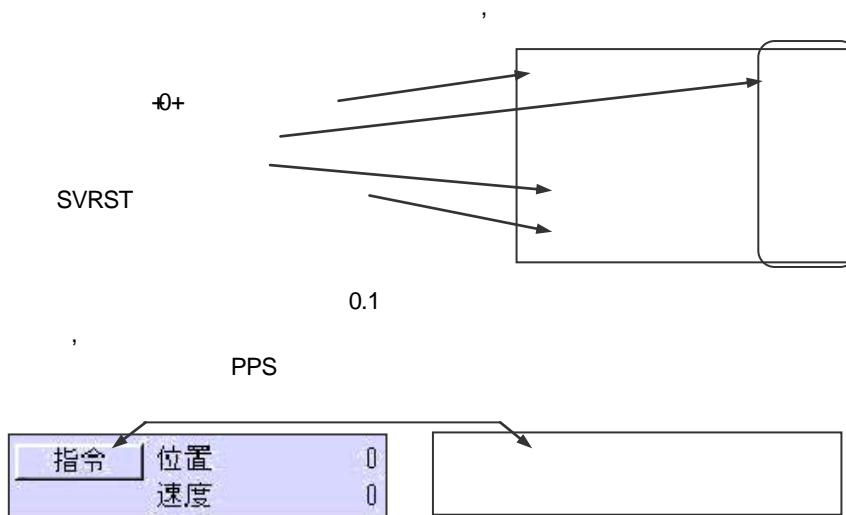
<b>X軸</b>		移動量	1500	REST(hex)	0h			<b>Y軸</b>		移動量	1500	REST(hex)	0h		
指令	位置		0	RIST(hex)	0h	指令	位置		0	RIST(hex)	0h	指令	位置		0
	速度		0				速度		0				速度		0
CTRリセット		<span style="color: red;">■</span> +ELS	B接			CTRリセット		<span style="color: red;">■</span> +ELS	B接			CTRリセット		<span style="color: red;">■</span> +ELS	B接
		<span style="color: red;">■</span> -ELS						<span style="color: red;">■</span> -ELS						<span style="color: red;">■</span> -ELS	
		<span style="color: green;">■</span> DLS	B接					<span style="color: green;">■</span> DLS	B接					<span style="color: green;">■</span> DLS	B接
		<span style="color: green;">■</span> OLS	B接					<span style="color: green;">■</span> OLS	B接					<span style="color: green;">■</span> OLS	B接
SVON		Z				SVON		Z				SVON		Z	
SVRST		<span style="color: green;">■</span> INPOS	B接			SVRST		<span style="color: green;">■</span> INPOS	B接			SVRST		<span style="color: green;">■</span> INPOS	B接
		<span style="color: red;">■</span> SVALM	B接					<span style="color: red;">■</span> SVALM	B接					<span style="color: red;">■</span> SVALM	B接

5.7-2

(1)



(2)





## 5.7.2

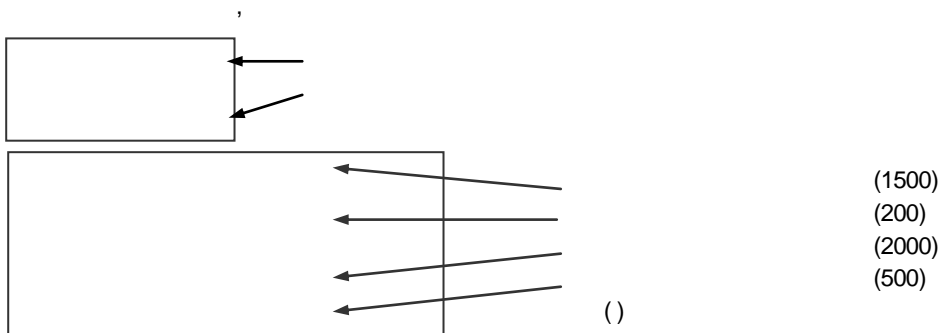


5.7-3

(1)



(2)



1.                   -9999999 +9999999
2.                                   1 65535pps
- 3.



## 5.8 Windows

5

(1) C	
(1) Microsoft Visual C++ (6.0) C	spc53000.exe
(2) Microsoft Visual Basic (6.0)	spc53002.exe
(3) Microsoft Visual Basic (.NET 2003)	spc53003.exe
(4) Microsoft Visual C#(.NET 2003)	spc53004.exe
(5) Embarcadero Delphi 2010	spc53005.exe

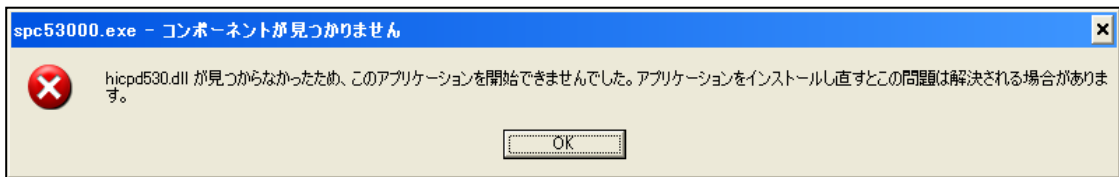
### 5.8.1

(\* .exe + +

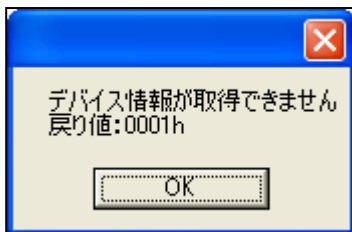
(1)

>  
>

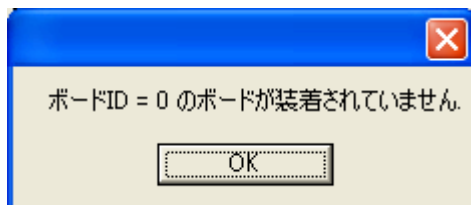
> 1 CPD , ID 0  
> CPD 2 ID  
>



DLL



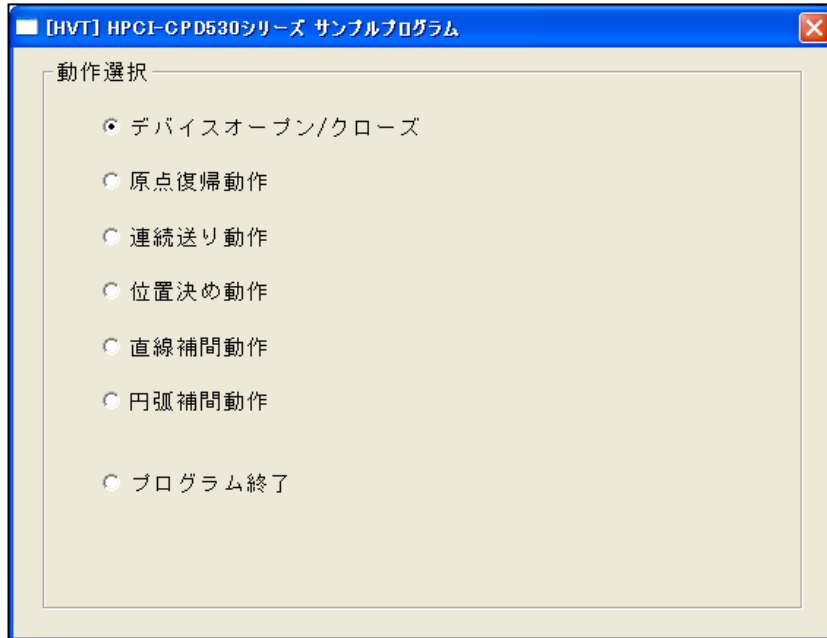
CPD



ID = 0

5.8-1

## 5.8.2



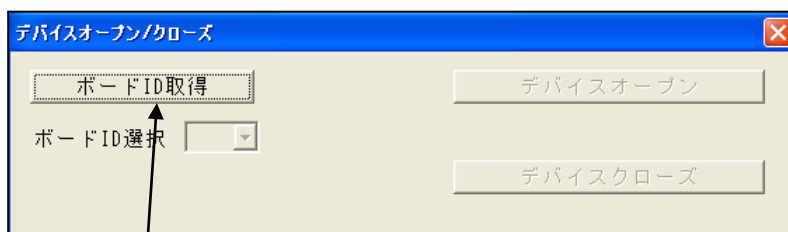
5.8-2

VB

(1)

CPD

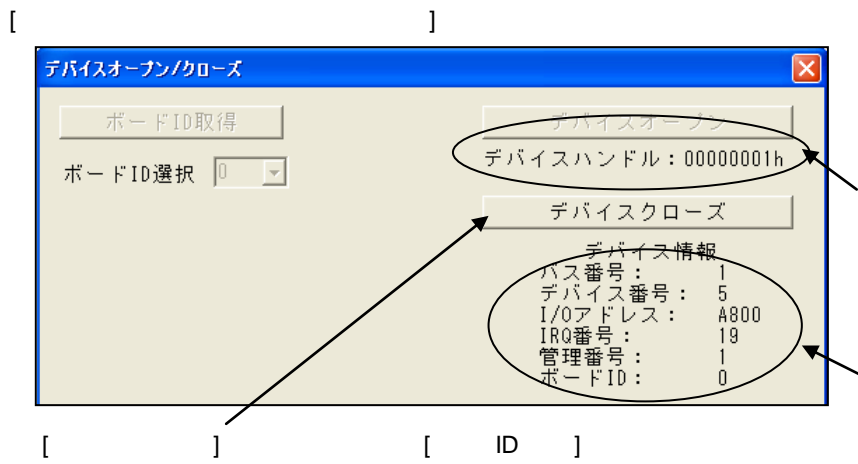
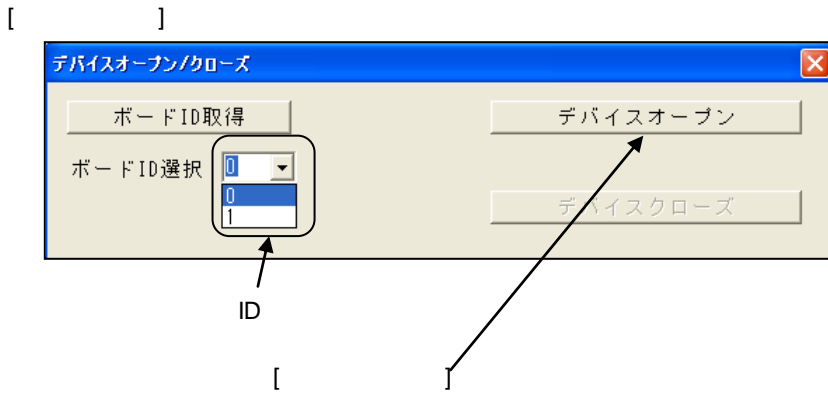
[ / ]



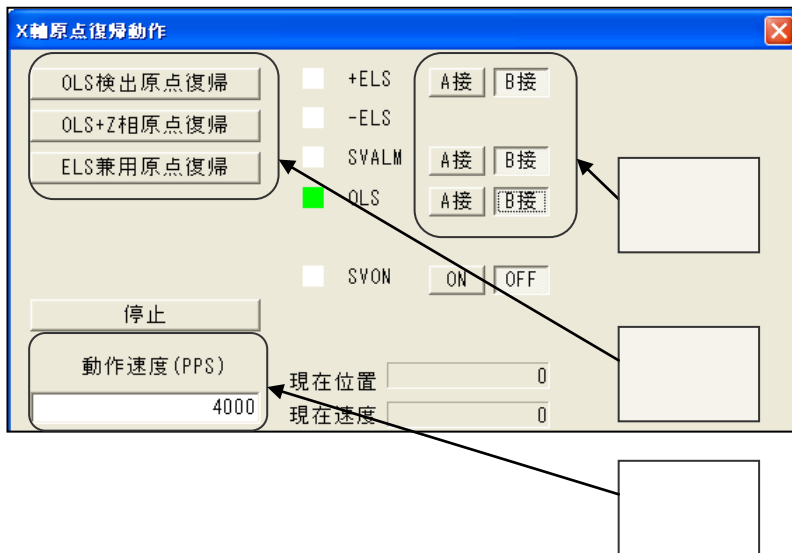
[ ID ]

ID

ID

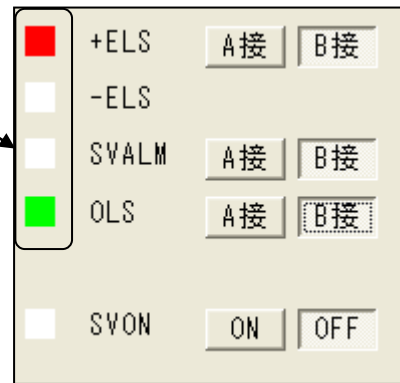


(2)



[ ]  
(1)

+ELS ELS SVALM OLS  
[A ]/[B ]  
[ON]/[OFF] SVON ON/OFF  
SVON  
[OFF] [ON]



' +ELS ELS SVALM  
' SVON  
' A B

(2)

1-65535 [ PPS ]  
4000 [ PPS ]  
400 (PPS) 400 [ PPS ] OLSon  
400 [ PPS ]

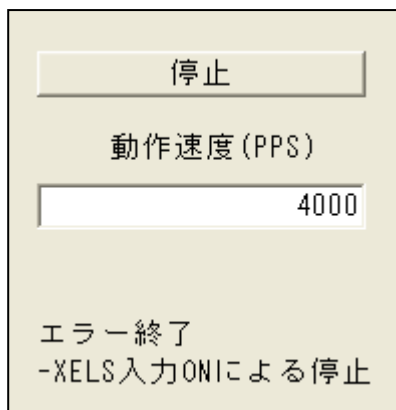
[ ]

0 OLS 1 OLS  
1 OLS+Z 2 OLSon Z  
2 ELS 6 ELS ELS  
<

[ ]

OLS OLSoff OLSon [ PPS ]  
OLSon OLS

OLS -ELS



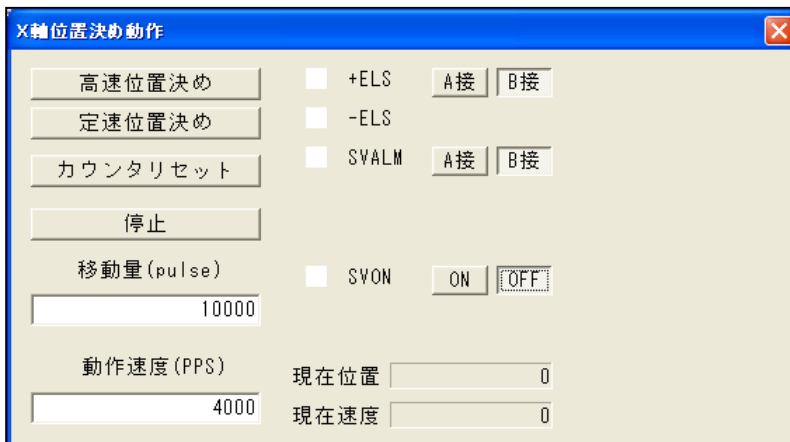
(3)



1-65535 [ PPS ]  
4000 [ PPS ]

[ +            ] [ +            ] [ -            ] [ -            ]  
[            ]  
          ELS            SVALM

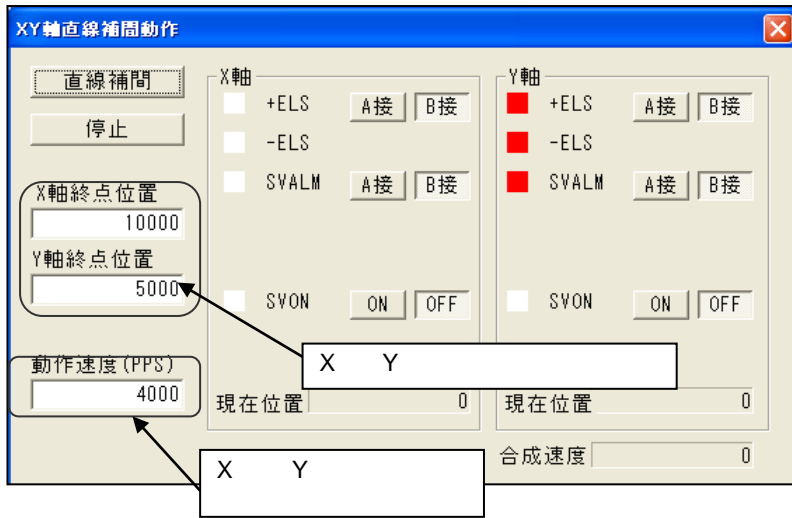
(4)



1-65535 [ PPS ]  
4000 [ PPS ]

[            ] [            ]  
[            ]                    0  
[            ]

(5)

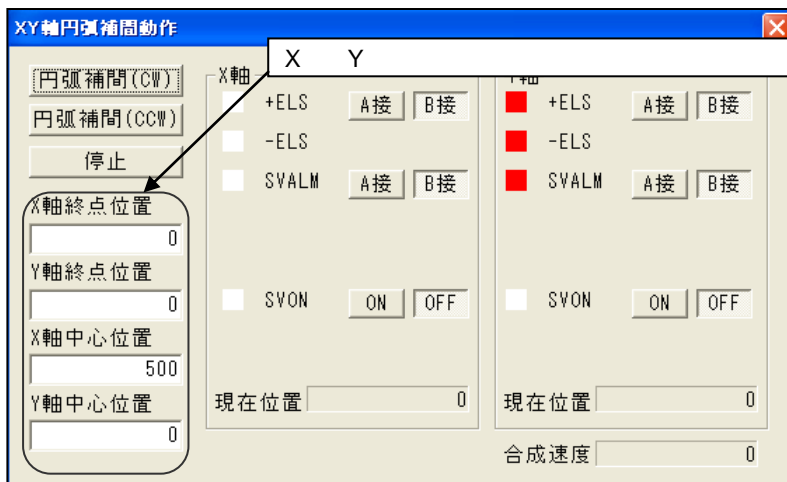


[       ]  
 [       ]  
 XY

(6)

500 [PPS]

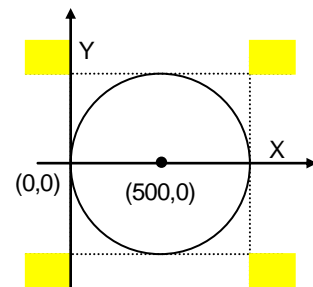
ON



(0,0)

X      Y

[       ]  
 [       ]  
 XY





## 5.9 DOS

DOS

C

(1)

(2) I/F

I/F

### 5.9.1

clk.bat

- (V6.0)

└─

├─ hicpd530.h  
├─ hcpdtype.h  
└─ licpd530.lib

"smp530.c" "#include"

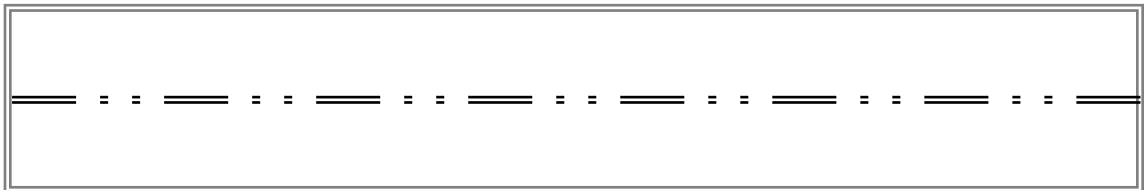
"hicpd530.h" "#include"

|

### 5.9.2

"smp530.exe"

(1)



(2)

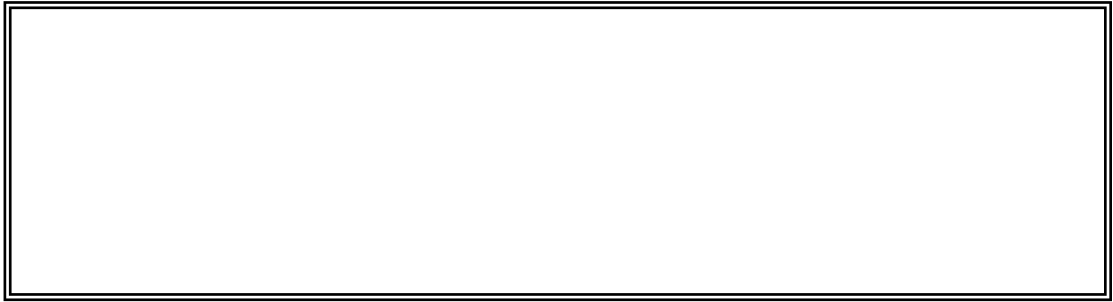


'I' 'I'

'Y' 'y'



(3)



CTR1  
 CTR2  
 SPD (0 16383)  
 MssL  
 MssH  
 Sss +  
 RSTS  
 RIST  
 REST

MssL		b7	b6	b5	b4	b3	b2	b1	b0
		SSC1	SSC0	SINT	SERR	SEND	---	SRUN	SSCM
		.	.	.	.	.	.	.	.
MssH		b15	b14	b13	b12	b11	b10	b9	b8
		SPDF	SPRF	---	SCMP5	SCMP4	SCMP3	SCMP2	SCMP1
		.	.	.	.	.	.	.	.
Sss (RSTS)		b15	b14	b13	b12	b11	RSTS:b10	b1	b0
		SDLS	SOLS	SMEL	SPEL	SALM	SEZ	SVRST	SVON
					+				

RSTS                      b10/SEZ=EZ

(4)



" "  
 " "  
 " "  
 " "  
 " "

(5)

### 5.9.3

(1)

"3:Register"



(2)

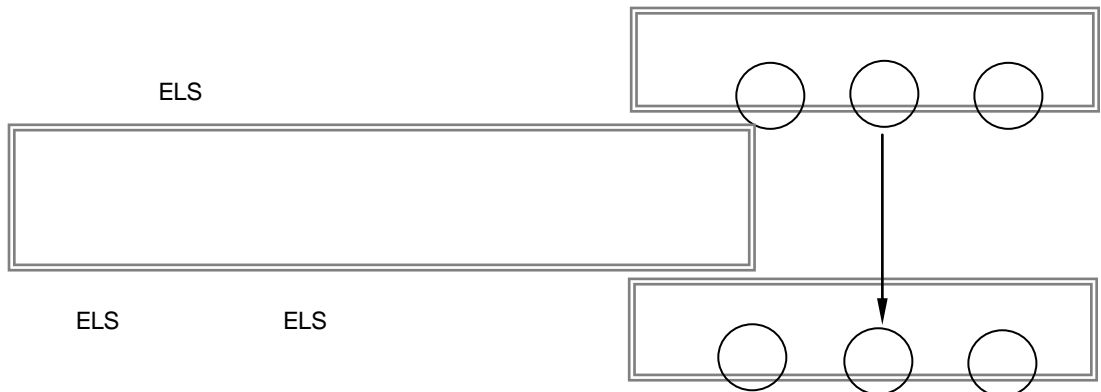
	0		I	I	
	1		C CMP45	C	/
	2		P DLS/PCS	P	/
	3		O	O	
	4		E ELS	E	ELS
	5		A ALM	A	SVALM
1	6				
2	7				
3	8				

3( ^ \* â • c ^ ! D+ /



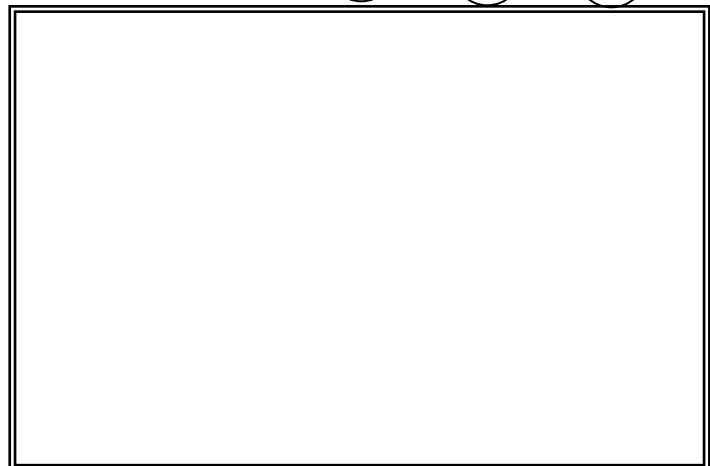
nter

3

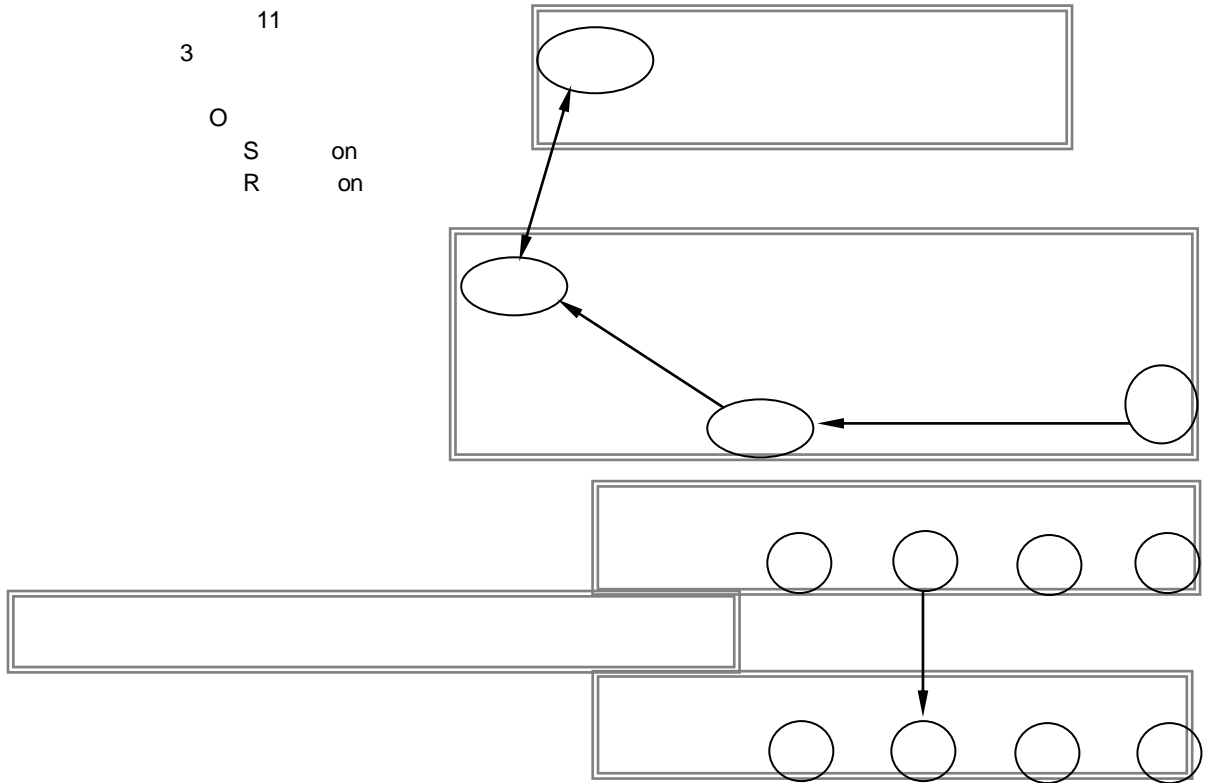


(3)

4



(4)



3 11  
 O S R on on

