# PCL6125 Evaluation Board PCL6125-EB

# User's Manual

# **Application Software**

	X−a	xis			Y−a	xis	
MSTSW	0000 h	SSTSW	0010 h	MSTSW	0000 h	SSTSW	0010 h
RMV	2304	PRMV	2304	RMV	2304	PRMV	2304
RFL	400	PRFL	400	RFL	400	PRFL	400
RFH	1500	PRFH	1500	RFH	1500	PRFH	1500
RUR	8926	PRUR	8926	RUR	8926	PRUR	8926
RDR	0	PRDR	0	RDR	0	PRDR	0
RMG	1199	PRMG	1199	RMG	1199	PRMG	1199
RDP	0	PRDP	0	RDP	0	PRDP	0
RMD	00000041 h	PRMD	00000041 h	RMD	00000041 h	PRMD	00000041 h
RIP	0	PRIP	0	RIP	0	PRIP	0
RUS	0	PRUS	0	RUS	0	PRUS	0
RDS	0	PRDS	0	RDS	0	PRDS	0
RENV1	00000002 h	RIRQ	00000000 h	RENV1	00000002 h	RIRQ	00000000 h
RENV2	80000055 h	RLTC1	0	RENV2	80000055 h	RLTC1	0
RENV3	0000B002 h	RLTC2	0	RENV3	0000B002 h	RLTC2	0
RENV4	00000000 h	RLTC3	0	RENV4	00000000 h	RLTC3	0
RCUN1	0	RLTC4	0	RCUN1	0	RLTC4	0
RCUN2	0	RSTS	00001800 h	RGUN2	0	RSTS	00001800 h
RCMP1	0	REST	00000000 h	RCMP1	0	REST	00000000 h
RCMP2	0	RIST	00000000 h	RCMP2	0	RIST	00000000 h
RCMP3	0	RPLS	0	RCMP3	0	RPLS	0
RCMP4	0	RSPD	0	RCMP4	0	RSPD	0
		RSDC	0			RSDC	0
SEL	COM D	ATx	Vis				
00	00 h FFF	FFFFF h		Wri	te	RGPD	FFFF h
	C	АТу	Y-axis	<b>D</b>			
	FFF	FFFFF h		Detail s	setting		

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## 1. Introduction

Thank you for considering our PCL6125-EB Evaluation Board Application software (PCL6125-EB.exe).

This manual describes specifications, functions of our PCL6125-EB Evaluation Board Application software (PCL6125-EB.exe) and how to connect and use it.

Be sure to read this manual thoroughly and keep it handy in order to use the product appropriately.

## 1.1 How to use this manual

- 1. Reproduction of this manual in whole or in part without permission is prohibited by the Copyright Act.
- 2. The contents of this manual are subject to change without the prior notice along with the improvement of performance and quality.
- 3. Although this manual is produced with the utmost care, if there are any questions, errors or omissions, please contact our sales representative.

#### 1.1.1 Symbol description

#### 1.1.1.1 Physical damage level

In this manual, the physical damage level is defined as follows.

Serious injury

Those that might cause aftereffects such as loss of sight, wound, burn, electric shock, fracture, poisoning, or those requiring hospitalization or long-term outpatient treatment.

Minor injury

Those not requiring hospitalization or long-term outpatient treatment. (Other than "serious injury" above)

#### 1.1.1.2 Hazardous level

The product is designed with the top priority for the safety of operators. However, due to the nature of the product, there are risks that cannot be eliminated. In this manual, the seriousness and level of these risks are divided into three categories: "Danger," "Warning," and "Caution." Be sure to read and understand the symbols descriptions thoroughly before operating or performing maintenance work on the product.

"Danger", "Warning", and "Caution" are indicated in the order of severity of hazard: (danger > warning > caution), and the meanings are described underneath.

#### 🥼 Danger

"Danger" indicates that it might cause an imminent risk that could result in the death or serious injury of the operator during operations of this product.



"Warning" indicates that it may result in the death or serious injury of the operator during operations of this product.



#### 🛕 Caution

"Caution" indicates that it may result in minor injury of the operator during operations of this product.

#### **Caution**

"Caution" without warning symbol indicates that the operator is not likely to be injured, but it can cause damage or result in a malfunction to this product, your equipment, or your instruments.

In addition to the hazardous level classifications described above, the following notations are also used.

#### I m p o r t a n c e

"Importance" indicates the information and contents that must be known particularly in operations and maintenance works of this product.

Remarks

"Remarks" initiates the useful information or contents for operations and maintenance works of this product.

#### 1.1.1.3 Warning symbol

In this manual, the following symbols are added along with the notations "Danger," "Warning," "Caution," and "Importance" to indicate the warning contents in an easy-to-understand manner.



Indicates that a high voltage may be applied. Failure to confirm safety or mishandling of this product might cause a risk of electric shock, burn, or death.



Indicates that some parts have a high surface temperature, and the mishandling can cause a risk of burns.



Indicates that mishandling may cause a fire.



Indicates "prohibited" actions that must not be performed in the operation and the maintenance work of this product.



Indicates "mandatory" actions that must be performed in the operation and the maintenance work of this product.

## **1.2 Production warranty**

#### 1.2.1 Warranty period

The warranty period is one year from the data of the delivery to an assigned place.

#### 1.2.2 Warranty scope

If defects are found in the product during the warranty period under normal use defined used only in method set forth in this manual, NPM will repair the product without charge or replace it with a new one at the direction of NPM. The following cases are not covered by the warranty even during warranty period.

- 1. The products are modified or repaired by anyone other than NPM or a person authorized by NPM.
- 2. The defect results from dropping of the product after delivery or mishandling in transit.
- 3. Wearing of components, natural deterioration or fatigue
- 4. Causes arising from usage other than those described in this document
- 5. The product has been subjected to natural disaster or force majeure such as fire, earthquake, lightning strike, wind, flood, salt, electrical surges, etc.
- 6. The defects or damage results from a cause that is not the fault of NPM.

When the product is purchased from a supplier other than NPM, please contact that supplier regarding the product warranty.

NPM will not provide on-site repair. If the product is defective, the product must be returned to the specified location for repair.

The warranty period of the repaired product is the same as the warranty period before the repair.

This warranty does not cover damages caused by product malfunction or damage to the product itself.

## 1.3 Notice

This document aims to describe the details of functions of the product. It does not warrant fitness for a particular purpose of the customer. The examples of applications and circuit diagrams in this manual are included only for your reference. Please confirm the features and the safeties of devices or equipment before use.

## **1.4 Confirmation**

Please do not use this product in the following conditions. If you need to use in the following conditions, please contact our sales representatives:

- 1. Any equipment that may require a high reliability or a safety, such as nuclear facilities, electricity or gas supply systems, transportation facilities, vehicles, various safety systems, medical equipment, etc.
- 2. Any equipment that may directly affect human survivals or properties.
- 3. Usages under conditions or circumstances that are not specified in the catalog, manual, etc.

For applications that may cause serious damages to a human life or property due to failure of this product, ensure high reliability and safety by redundant design.



## 2. Information

This is the operation manual of an application software to operate the control board.

By using this software and PCL6125 Evaluation Board (PCL6125-EB), you can learn motor control functions using pulse control LSI, PCL6125.

Please refer to the following manuals along with this manual.

(x: revision)

	Manual name [Outline]	Document file name	Software file name	Document no.
Hardware Manual	PCL6125 Evaluation Board (PCL6125-EB) User's Manual (Hardware)	PCL6125-EB _Hardware Manual _VerxE.pdf	_	TA600038-ENx/x
Application Software Manual	PCL6125 Evaluation Board (PCL6125-EB) User's Manual (Application Software) [Setting accel / decel pattern and register indication]	PCL6125-EB Application Manual VerxE.pdf	PCL6125-EB _Application _VxxxJE.zip	TA600039-ENx/x (This document)
Motion Pattern Builder Manual	PCL6125 Evaluation Board (PCL6125-EB) User's Manual (Motion Pattern Builder Application Software) [It visually describes the functions to perform an axis control with a flowchart]	PCL6125-EB _Motion Builder Manual _VerxE.pdf	PCL6125-EB _Motion Builder _VxxxJE.zip	TA600040-ENx/x
Reference material	PCL6115/6125/6145 User's Manual	_	_	DA70152-0/xE

Please download the application software and related materials from NPM website.

## 2.1 Operating environment

We have checked this software operation with Windows 7 and Windows10 (both 32-bit and 64-bit).

(We have never checked it with OS other than the above.)

Please change power saving setting so as not to operate "sleep mode" during an operation.

## 3. Install the device driver

## 3.1 Folder structure

When you unzip the compressed file (PCL6125-EB\_Application\_V140JE.zip), the following folders are created.

¥PCL6125-EB_Application_V140JE	¥Driver	CDM21226_Setup.exe
	 PCL6125-EB.exe	
	 FTD2XX_NET.dll	
	PCL6125.ini	
	 menu_text.ini	
	PCL6125-EB_Data100.pcl	

"PCL6125-EB.exe" is an executable file of the software and "CDM21226\_Setup.exe" is the device driver installer.

"PCL6125.ini" and "menu\_text.ini" are text files for PCL6125-EB.

"PCL6125-EB\_Data100.pcl" is a setting data file for PCL6125-EB.

## 3.2 Installation

Double-click "CDM21226\_Setup.exe" to launch the installer and follow the instructions on screen to complete the installation.

If you have already installed it, you do not need to install it again.



Note: Please download and use the latest version of the device driver on FTDI's website (<u>http://www.ftdichip.com/Drivers/D2XX.htm</u>).



## 4. Basic operation of the software

## 4.1 Start-up software

Please make sure that the PCL6125-EB is properly connected to your PC.



Double-click the executable file, "PCL6125-EB.exe" to open the "Main Screen" as follows.

	X−a	xis			Y−a	xis	
MSTSW	0000 h	SSTSW	001F h	MSTSW	0000 h	SSTSW	001F h
RMV	0	PRMV	0	RMV	0	PRMV	0
RFL	0	PRFL	0	RFL	0	PRFL	0
RFH	0	PRFH	0	RFH	0	PRFH	0
RUR	0	PRUR	0	RUR	0	PRUR	0
RDR	0	PRDR	0	RDR	0	PRDR	0
RMG	0	PRMG	0	RMG	0	PRMG	0
RDP	0	PRDP	0	RDP	0	PRDP	0
RMD	00000000 h	PRMD	00000000 h	RMD	00000000 h	PRMD	00000000 h
RIP	0	PRIP	0	RIP	0	PRIP	0
RUS	0	PRUS	0	RUS	0	PRUS	0
RDS	0	PRDS	0	RDS	0	PRDS	0
RENV1	00000000 h	RIRQ	00000000 h	RENV1	00000000 h	RIRQ	00000000 h
RENV2	80000000 h	RLTC1	0	RENV2	80000000 h	RLTC1	0
RENV3	00000000 h	RLTC2	0	RENV3	00000000 h	RLTC2	0
RENV4	00000000 h	RLTC3	0	RENV4	00000000 h	RLTC3	0
ROUN1	0	RLTC4	0	RCUN1	0	RLTC4	0
ROUN2	0	RSTS	00001800 h	RCUN2	0	RSTS	00001800 h
RCMP1	0	REST	00000000 h	RCMP1	0	REST	00000000 h
RCMP2	0	RIST	00000000 h	RCMP2	0	RIST	00000000 h
RCMP3	0	RPLS	0	RCMP3	0	RPLS	0
RCMP4	0	RSPD	0	RCMP4	0	RSPD	0
		RSDC	0			RSDC	0
SEL	COM D	ATx FFFFF h	X-axis	W	rite	RGPD	FFFF h

This screen shows the register values that are read regularly from PCL6125. The values are displayed in black when they are zero; the values other than zero are displayed in red.

PCL6125 can control two axes; X and Y-axis and the screen shows all of the registers that you can set.



If the PCL6125-EB is not connected or there is a hardware problem, the following screen will be displayed.

Error	×
[ PCL6125 Evaluation Board ] not found	
OK	

If communication between the PCL6125-EB and the PC is lost, the following screen will be displayed.

Error	×
Connection with [PCL6125-StarterKit] is lost	
OK	

#### 4.1.1 Change the radix of register

Right-click the register values to switch the notation between decimal and hexadecimal. The radix can be changed individually for each register.

However, registers having specific meanings in bit units (such as RENV1) are fixed to hexadecimal and cannot be changed.

#### 4.1.2 Write data to register

If you double-click the part where the value of the register of the X axis is displayed, the data part will be highlighted in yellow, the cursor will move to the data input part "DATx" of the X axis, and the check mark of the X axis will be checked. I will. In addition, the register write command is set in the "COM" part, and the axis selection code (0x01) is added to the "SEL" part.

File (F) Tool (T)	Other (O)			
Х	-axis		Y	−axis
MSTSW 0000 h	SSTSW	0010 h	MSTSW 0000 h	SSTSW 0010 h
RMV         2304           RFL         400           RFH         1500	PRMV PRFL PRFH	2304 400 1500	RMV         2304           RFL         400           RFH         1500	PRMV         2304           PRFL         400           PRFH         1500
SEL COM	DATx	X-axis		RGPD FFFF b
01 80 h	DATy d	⊻ Y-axis	Write	

If you double-click the part where the value of the register of the Y axis is displayed, the data part will be highlighted in yellow, the cursor will move to the data input part "DATy" of the Y axis, and the check mark of the Y axis will be checked. I will. In addition, the register write command is set in the "COM" part, and the axis selection code (0x02) is added to the "SEL" part.



Enter the data that you want in write "DATx" and "DATy", and click "Write" button. The radix of the data to write is the same as the setting in "4.1.1 Change the radix of register". Please note that "Read-only register" cannot be written. Negative values can be entered for RMV, PRMV, RCUN1, RCUN2, RCMP1, RCMP2, RCMP3, RCMP4.

You can enter a negative value for RDP when RMD.MSDP = 0 and for PRDP when PRMD.MSDP = 0

#### 4.1.3 Axis selection (SEL) settings

It consists of "Axis selection code", "Type selection code" and "Device selection code ".

"Device selection code" can communicate when the value of the upper 2 bits (SEL.S7, SEL.S6) matches the device number setting switch (SW1-3, SW1-4) on the PCL6125 evaluation board. I can do it.

If the device number is different, double-click the executable file of "PCL6125-EB.exe" to display the main screen as shown

below.

1110 (17)	ioor(i) othe			
	X-a	xis	Y−a	ixis
MSTSW	FFFF h	SSTSW FFFF h	MSTSW FFFF h	SSTSW FFFF h
RMV	-1	PRMV -1	RMV -1	PRMV -1
RFL	4294967295	PRFL 4294967295	RFL 4294967295	PRFL 4294967295
RFH	4294967295	PRFH 4294967295	RFH 4294967295	PRFH 4294967295
RUR	4294967295	PRUR 4294967295	RUR 4294967295	PRUR 4294967295
RDR	4294967295	PRDR 4294967295	RDR 4294967295	PRDR 4294967295
RMG	4294967295	PRMG 4294967295	RMG 4294967295	PRMG 4294967295
RDP	4294967295	PRDP 4294967295	RDP 4294967295	PRDP 4294967295
RMD	FFFFFFFF h	PRMD FFFFFFFFh	RMD FFFFFFF h	PRMD FFFFFFFF h
RIP	4294967295	PRIP 4294967295	RIP 4294967295	PRIP 4294967295
RUS	4294967295	PRUS 4294967295	RUS 4294967295	PRUS 4294967295
RDS	4294967295	PRDS 4294967295	RDS 4294967295	PRDS 4294967295
RENV1	FFFFFFF h	RIRQ FFFFFFF h	RENV1 FFFFFFF h	RIRQ FFFFFFFF h
RENV2	FFFFFFFF h	RLTC1 -1	RENV2 FFFFFFF h	RLTC1 -1
RENV3	FFFFFFF h	RLTC2 -1	RENV3 FFFFFFF h	RLTC2 -1
RENV4	4294967295	RLTC3 -1	RENV4 4294967295	RLTC3 -1
RCUN1	-1	RLTC4 -1	RCUN1 -1	RLTC4 -1
RCUN2	-1	RSTS FFFFFFF h	RCUN2 -1	RSTS FFFFFFF h
RCMP1	-1	REST FFFFFFF h	RCMP1 -1	REST FFFFFFF h
RCMP2	-1	RIST FFFFFFFFh	RCMP2 -1	RIST FFFFFFF h
RCMP3	-1	RPLS 4294967295	RCMP3 -1	RPLS 4294967295
RCMP4	-1	RSPD 4294967295	RCMP4 -1	RSPD 4294967295
		RSDC 4294967295		RSDC 4294967295
SEL	COM D	ATx X-axis		
83	80 h 2	304 d 🗹	Write	RGPD FFFFFFF h

"Device selection code" is normal by matching the values of the upper 2 bits (SEL.S7, SEL.S6) or the values of the device number setting switches (SW1-3, SW1-4) on the PCL6125 evaluation board. It becomes the main screen.

Type sele	ction code	Communication format		
SEL.S5	SEL.S4	Communication format		
0	0	Write commands (including register writing and reading) [Normal setting]		
0	1	Read main status		
1	0	Write general-purpose output port		
1	1	Read sub status and general-purpose input/output port		

You can select from four types of communication formats with the bit (SEL.S5, SEL.S4) value of the "Type selection code".

For the "axis selection code", the axis for which "1" is set in the lower 4 bits (SEL.S3, SEL.S2, SEL.S1, SEL.S0) is the target of command writing. If you set "1" for multiple axes, you can write the same command to multiple selected axes. If you set "0" for all axes, it is considered that only the X axis is selected.

By clicking the X-axis check box and the Y-axis check box, you can select the axis by adding or removing the check mark. You can write directly to "SEL".



Click the cursor on "SEL" to display the contents of "Axis selection (SEL)". After checking the contents, click the "OK" button or press the close mark on the upper right to turn off the display screen.

Axis s	eleo	tion(SEL)	×
S0: ) S1: ) S2: (/ S3: (/	X axi Y axi Z axi U ax	s select s select s select) is select)	
55	54		
0	0	: Write commands	
ō	1	: Read main status	
1	ò	:Write general-purpose output port	
1	1	: Read sub status and general-purpose input/output port	
S7	56	: DS1 terminal DS0 terminal	
0	0	: L(0) L(0)	
0	1	; L(0) H(1)	
1	0	; H(1) L(0)	
1	1	: H(1) H(1)	
		ОК	

Error	×	
Axis Sellect Error Check the axis checkbox!		
ОК		



## 4.1.4 Command (COM) setting

Please write the operation command, general-purpose output bit control command, or control command of PCL6125 in the column "COM" directly.



Do not use a register read-out command.

Click "Command" to display the command contents. After confirming the content, press "OK" button or press the close mark at the upper right corner to end the screen.

All of the commands are not displayed in the screen. So please refer to PCL6115/ 6125/ 6145 User's Manuals.

Command contents	×	
Command: 50h: (STAFL)FL constant speed srart 51h: (STAFH)FH constant speed srar 52h: (STAD)High-speed start 1 53h: (STAUD)High-speed start 2 49h: (STOP)Stops an axis immediately 4Ah: (SDSTP)Decelerater and stops 10h-17h: (PORST-P7RST)P0-P7 terminal L-level 18h-1Fh: (POSET-P7SET)P0-P7 terminal H-level 20h: (CUN1R)Clear Counter 1 21h: (CUN2R)Clear Counter 2		Error X Axis Error Check the status and extended status information!
ОК		ОК



## 4.1.5 Detail setting of register data

Г

Registers that have the specific meanings in bit unit (such as RENV1) can be set in detail. When you select to write in such registers, "Detail setting" button is enabled.

Click the "Detail setting" button to display the detailed setting screen. Refer to the sections from "4.3.6 "PRMD (Operation mode) (F)" menu" to "4.3.12 "PRMG (Speed magnification rate) (L)" menu" regarding this "Detail setting".

PCL6125 Ev	aluation Board							
File (F)	Tool (T) Oth	ier (O)						
	X−a	axis		Y-axis				
MSTSW	0000 h	SSTSW	0010 h	MSTSW	0000 h	[	SSTSW	0010 h
RMV	2304	PRMV	2304	RMV	2304	[	PRMV	2304
RFL	400	PRFL	400	RFL	400	Ì	PRFL	400
RFH	1500	PRFH	1500	RFH	1500	Ì	PRFH	1500
RUR	8926	PRUR	8926	RUR	8926	Ì	PRUR	8926
RDR	0	PRDR	0	RDR	0	Ì	PRDR	0
RMG	1199	PRMG	1199	RMG	1199	ľ	PRMG	1199
RDP	0	PRDP		RDP	0	Ì	PRDP	0
RMD	00000041 h	PRMD	00000041 h	RMD	00000041h	Ì	PRMD	00000041 h
RIP	0	PRIP	0	RIP	0	Ì	PRIP	0
RUS	0	PRUS		RUS	0	Ì	PRUS	0
RDS	0	PRDS	0	RDS	0	ĺ	PRDS	0
RENV1	0000F002 h	RIRQ	00000000 h	RENV1	0000F002 h	[	RIRQ	00000000 h
RENV2	80000055 h	RLTC1	0	RENV2	80000055 h	[	RLTC1	0
RENV3	0000B002 h	RLTC2	0	RENV3	0000B002 h	[	RLTC2	0
RENV4	0	RLTC3	0	RENV4	0	[	RLTC3	0
RCUN1	0	RLTC4	0	RCUN1	0	ĺ	RLTC4	0
RCUN2	0	RSTS	00001800 h	RCUN2	0	ĺ	RSTS	00001800 h
RCMP1	0	REST	00000000 h	RCMP1	0	ĺ	REST	00000000 h
RCMP2	0	RIST	00000000 h	RCMP2	0	ĺ	RIST	00000000 h
RCMP3		RPLS	0	RCMP3	0	ĺ	RPLS	0
RCMP4	0	RSPD	0	RCMP4	0	[	RSPD	0
		RSDC	0			[	RSDC	0
SEL 03	COM 9C h 🛄	DATx 100F002 h	X-axis	 Wri	te	[	RGPD	FFFF h
	00	DATy 100F002 h	Y-axis ☑	Detail s	setting			

Right-click the register name to display the register contents. After confirming the contents, press "OK" button or press "close mark" at the upper right corner to end this display screen.

	X-a	xis			Y−axis					
MSTSW	0000 h	SSTSW	0010 h		MSTSW	0000 h	SSTSW	0010 h		
RMV	2304	PRMV	2304		RMV	2304	PRMV	2304		
RFL	400	PRFL	400		RFL	400	PRFL	400		
RFH	1500	PRFH	1500		RFH	1500	PRFH	1500		
RUR	8926	PRUR	8926		RUR	8926	PRUR	8926		
RDR	0	PRDR	0		RDR	0	PRDR	0		
RMG	1199	PRMG	1199		RMG	1199	PRMG	1199		
RDP	0	PRDP	0		RDP	0	PRDP	0		
RMD	00000041 h	PRMD	00000041 h		RMD	00000041 h	PRMD	00000041 h		
RIP	0	PRIP	0	i	RIP	0	PRIP	0		
RUS	0	PRUS	0		RUS	0	PRUS	0		
RDS	0	PRD	-register cont	ent			PRDS	0		
RENV1	0000F002 h	RIR	. register cont	crit	-		RIRQ	00000000 h		
RENV2	80000055 h	RLTC				n	RLTC1	0		
RENV3	0000B002 h	RLTC PR	MV:	-		h h	RLTC2	0		
RENV4	0	RLTC R	eding amount( ead/Write	larg	get position)s	etting	RLTC3	0		
RCUN1	0	RLTO	ady white				RLTC4	0		
RCUN2	0	RST					RSTS	00001800 h		
RCMP1	0	RES				ОК	REST	00000000 h		
RCMP2	0	RIS					RIST	00000000 h		
RCMP3	0	RPLS	0		RCMP3	0	RPLS	0		
RCMP4	0	RSPD	0		RCMP4	0	RSPD	0		
		RSDC	0				RSDC	0		
CEI	COM [									
			X-axis				RGPD	EFEE h		

If you change the values of RMV/PRMV, RFL/PRFL, RFH/PRFH, RUR/PRUR, RDR/PRDR, or RMD/PRMD, movement amount, start speed, operation speed, acceleration time, deceleration time, linear acceleration/deceleration mode/S-curve acceleration/deceleration mode of the simple control operation will be set again. These will also be set again when the setting data file is loaded.

## 4.2 "File (F)" menu

Click "File" to display the file menu.





#### 4.2.1 "Load (L)" menu

Register status saved by "Save" menu (refer to 0 "Save (S)" menu) can be written to PCL6125".

vennine - New Felder						,		9== -		
Pictures	•	Name ^	Date modifi	ed	Type		Size	9== •		1
Videos	_	PCL6125-EB 001.pd	9/26/2019	3:12 PM	PCL File	_	2 KB			1
Computer Coal Disk (C:) PCL6115-EV PerfLogs Pergam Files Vindows WORK (64E) kawaral kawaral kawaral Kamaki Motionnet Starter Ki PCL25-EB FT_Prog MP_Builder PCL25-EB PCL25-EB PCL25-EB PCL25-EB PCL25-EB										
File nar	ne: [	PCL6125-EB_001.pcl				•	PCL Register Fi	e (*.PCL)	• ancel	

Please select the saved file name and click "Open" button. "PCL6125-EB\_Data100.pcl" is a setting data file for PCL6125-EB. Please note that the registers you can write to PCL6125 are as follows.

PRMV, PRFL, PRFH, PRUR, PRDR, PRMG, PRDP, PRMD, PRIP, PRUS, PRDS, RENV1, RENV2, RENV3, RENV4, RCUN1, RCUN2, RCMP1, RCMP2, RCMP3, RCMP4, RIRQ

#### 4.2.2 "Save (S)" menu

You can save the values (including status values) of registers displayed on the main screen by a text file.

Organize 🔻 New folder					
🛃 Videos 🔺	Name ^	Date modified	Туре	Size	
Computer	S FTD2XX_NET.dll	6/23/2016 3:44 PM	Application extension	69 KB	
Local Disk (C:)	imenu_text.ini	9/27/2019 5:29 PM	Configuration settings	31 KB	
PCL6115-EV	PCL6125.ini	11/12/2019 4:56 PM	Configuration settings	1 KB	
🍌 PerfLogs	PCL6125-EB.exe	10/11/2019 5:34 PM	Application	3,355 KB	
Program Files (x Program Files (x Users Windows WORK (64E) kwarai kumaki PCL5125-EB Firpog MP_Builder PCL5125-EB	PCL6125-EB_001.pd	9/26/2019 3:12 PM	PCL File	2 KB	
File name: PCL61	25-EB_002.pd				3

Please write a file name and click "Save" button.

#### 4.2.3 "End (E)" menu

Close the application software.

## 4.3 "Tool (T)" menu

Click "Tool" to display the tool menu.

PCL6125 E	valuation Board	
File (F)	Tool (T) Other (O)	
	Status (A)	V_avia
	RSTS (Extension status) (B)	T-axis
MSTSW	REST (Error interrupt factor) (C)	0000 h SSTS
RMV	RIST (Event interrupt factor) (D)	2304 PRM <sup>•</sup>
RFL	RSPD (EZ count value and current speed) (E)	400 PRFI
RFH	PRMD (Operation mode setting) (F)	1500 PRFF
RUR	Privid (Operation mode setting) (1)	8935 PRUF
RDR	RENV1 (Environment setting 1) (G)	0 PRDF
RMG	RENV2 (Environment setting 2) (H)	1199 PRM
RDP	RENV3 (Environment setting 3) (I)	U PRDI
	RENV4 (Environment setting 4) (1)	00000041 h PRMI
	DIDO (Found internet fonter setting +) (V)	
RDS	KIRQ (Event Interrupt factor setting) (K)	
	PRMG (Speed magnification rate setting) (L)	
RENV1	Simple control (M)	X-axis (X)
RENV2	Linear interpolation control (N)	Y-axis (Y)
RENV4	Reset (O)	00000000 h RLTC

## 4.3.1 "Status (A)" menu

Click "Status", to open the following screen. You can check the details of each status and sub-status bits.

Main sta	tus (X	) =	0000 h		
Main sta	tus (Y	) =	0000 h		
	х	Y			
SSCM			Operating		
SRUN	14		Pulse output starts		
SENI	14		Stop interrupt occurred		
SEND			Stopping		
SERR			Error interrupt occurred		
SINT			Event interrupt occurred		
SSC	0	0	Sequence number		
SCP1			Comparator1 condition is met		
SCP2	14		Comparator2 condition is met		
SCP3	14		Comparator3 condition is met		
SCP4			Comparator4 condition is met		
SEOR			Target position override failed		
SPRF			Pre-register is full		
Sub stati	ь (X)	- 1	0F0 b		
Sub statu	is (Y)	= 0	010 h		
Sub status (1) = 0010 h					
	~				
IOP	F0	10	General-purpose port		
IOP SFU	FO	10	General-purpose port Accelerating		
IOP SFU SFD	FO	10	General-purpose port Accelerating Decelerating		
IOP SFU SFD SFC	FO		General-purpose port Accelerating Decelerating In constant speed operation		
IOP SFU SFD SFC SALM	FO		General-purpose port Accelerating Decelerating In constant speed operation ALM input signal ON		
IOP SFU SFD SFC SALM SPEL	FO		General-purpose port Accelerating Decelerating In constant speed operation ALM input signal ON PEL input signal ON		
IOP SFU SFD SFC SALM SPEL SMEL	FO		General-purpose port Accelerating Decelerating In constant speed operation ALM input signal ON PEL input signal ON MEL input signal ON		
IOP SFU SFD SFC SALM SPEL SMEL SORG	FO		General-purpose port Accelerating Decelerating In constant speed operation ALM input signal ON PEL input signal ON MEL input signal ON ORG input signal ON		
IOP SFU SFD SALM SPEL SMEL SORG SSD			General-purpose port Accelerating Decelerating In constant speed operation ALM input signal ON PEL input signal ON MEL input signal ON SD input signal ON		

Bit items that are set to "1" in registers are displayed in blue. Close "Status" menu screen by pressing "Close" button or close mark at the upper right corner.



## 4.3.2 "RSTS (Extension status) (B)" menu

Click "RSTS" menu to open the following screen. You can check the details in each bit of RSTS register.

RSTS (Ext	ensio	on stat	tus) x
RSTS () RSTS ()	×) = Y) = <b>X</b>	0000 0000 <b>Y</b>	00000 h 00000 h
CND	0	0	Stopping
SCD			State of CSD input signal
SSTA			State of CSTA input signal
SSTP			State of CSTP input signal
SEMG			State of CEMG input signal
SPCS			State of PCS input signal
SERC			State of ERC output signal
SEZ			State of EZ input signal
SDRP			State of PDR(PA) input signal
SDRM			State of MDR(PB) input signal
SLTC			State of LTC input signal
SDIN			State of SD input signal
SINP			State of INP input signal
SDIR			Operation direction (OFF: + direction, ON: - direction)
SL3E			Monitoring state of trigger signal for RLTC3 register latch
SL3C			State of latch with RLTC3 register
SL3F	14		State of toggle change when RLTC3 register value is changed
SL4E	14		Monitoring state of trigger signal for RLTC4 register latch
SL4C	14		State of latch with RLTC4 register
SL4F			State of toggle change when RLTC4 register value is changed
			Close

Bit items set to "1" in RSTS register are displayed in blue.

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Close "RSTS (Extension status)" menu screen by pressing the "Close" button or close mark at the upper right corner.

## 4.3.3 "REST (Error interrupt factor) (C)" menu

Click "REST" menu to open the following screen. You can check the details in each bit of REST register.

REST (X) = REST (Y) =	00000000 h 00000000 h
x	Y
ESPL	Stopped by PEL input signal ON
ESML	Stopped by MEL input signal ON
ESAL	Stopped by ALM input signal ON
ESSP	Stopped by CSTP input signal ON
ESEM	Stopped by CEMG input signal ON
ESSD	Stopped by SD input signal ON
ESPO	Stopped due to PA/PB buffer overflow
ESEE	EA/EB input error occurred (Does not stop)
ESPE	PA/PB input error occurred (Does not stop)
ESPS	Stopped by (+) software limit
ESMS	Stopped by (-) software limit
	Close

Bit items set to "1" in REST register are displayed in red.

Close "REST (Error interrupt factor)" menu screen by pressing the "Close" button or close mark at the upper right corner. Since PCL6125-EB is serial-bus-interface base, write in the main screen to clear the bit showing "1".



## 4.3.4 "RIST (Event interrupt factor) (D)" menu

Click this "RIST" menu to open the following screen. You can check the details in each bit of RIST register.

RIST (Event interrupt factor)						
RIST (X) = 00000000 h						
V V						
ISEN Stopped normally	_					
ISNM Writing to pre-register is enabled	_					
ISUS Acceleration starts	_					
ISUE Acceleration ends	_					
ISDS Deceleration starts	_					
ISDE Deceleration ends	_					
ISC1 Comparator 1 condition is met	_					
ISC2 Comparator2 condition is met	_					
ISLT Latching the count value by LTC input signal	_					
ISOL ORG input signal ON	_					
ISSD SD input signal ON	_					
ISPD Input of PDR(PA) signal is changed	_					
ISMD Input of MDR(PB) signal is changed	_					
ISSA CSTA input signal ON	_					
ISPS (+) software limit is detected	_					
ISMS (-) software limit is detected						
ISEZ Stopped during deceleration with "RENV2. ORM = 1"						
ISBY Started	_					
ISL3 Count value is latched in RLTC3 register						
ISL4 Count value is latched in RLTC4 register						
Close						

Bit items set to "1" in RIST register are displayed in red.

Close "RIST (Event interrupt factor)" menu screen by pressing the "Close" button.

Since PCL6125-EB is serial-bus-interface base, write in the main screen to clear the bit showing "1".

#### 4.3.5 "RSPD (EZ counter value and current speed) (E)" menu

Click this "RSPD" menu to open the following screen. You can check the details in each bit of RSPD register.

RSPD (EZ count value and current speed)								
RSPD (X) = FFFF h RSPD (Y) = FFFF h								
	х		Y					
Current speed	0000	h	0000	h				
Count value of EZ	0000	h	0000	h				
			7					
	Close							

Press the "Close" button to close "RSPD (EZ counter value and current speed)" menu screen.



## 4.3.6 "PRMD (Operation mode) (F)" menu

Click this "PRMD" menu to open the following screen. You can set the details in each bit of PRMD register and write the data.

PRMD (O	peration mode setting) ×			
PRMD =	00000041 h Operation target			
MOD6-0	Selection of operating mode			
Positionin	g operation (Sets the target incremental position) 🗸 🗸			
MSDE	Decelerates (deceleration stop) by SD input ON			
MINP	Operation completed by INP input ON			
MSMD	Selects acceleration/deceleration operation			
Linear acc	celeration/deceleration ~			
MCCE	Stop counting of COUNTER1 and COUNTER2 by output pulses			
METM	Selects the operation complete timing			
Cycle cor	npletion 🗸			
MSDP Select the slow-down point				
Automatic setting 🗸				
MPCS Starts control the number of pulses after PCS input ON				
MSN1-0	Sequence number of the operation (No effect on operation)			
0	~			
MSY1-0	Select the start command function			
Start imm	ediately 🗸			
	Specify the axis to confirm stops X axis Y axis Z axis U axis			
MSPE	Deceleration stop or immediate stop by CSTP input signal			
MSPO	Outputs CSTP signal due to abnormal stops			
MADJ	FH correction function is not used			
MODE	Decelerates when CSD pin is Low level			
MCDO	Outputs Low level from CSD pin when decelerating or running at FL			
	Write Close			

Select a desired setting under the pull-down menus and check the menus and click "Write" and "Close" buttons.

Write to PRMD (or RMD) register, and close "PRMD (Operation mode)" menu screen.

You can also display this screen by clicking the "Detail setting" button in the main screen when writing PRMD (or RMD) register.

11000 - 000000000	Uperation target	X-axis	○ Y-axis		
MOD6-0 Selection of operati	ing mode				
Continuous (+)rotation controlled by command control					
Continuous operation controlled ( (+)rotation origin return operation Positioning operation (specifies t Timer operation Positioning operation controlled b Positioning operation controlled b Continuous linear interpolation	by (PDR/MDR)input 1 target position) by (PA/PB)input by (PDR/MDR)input				

Click the pull-down mark on the right side of the combo box to display the option items and click the item you need. Close "PRMD (Operation mode)" menu screen by clicking the "Close" button or close mark at the upper right corner.

## 4.3.7 "RENV1 (Environment setting 1) (G)" menu

Click this "RENV1" menu to open the following screen. You can set the details in each bit of RENV1 register and write the data.

RENV1 =	0000F002 h Operation target 💿 X-axis 🔿 Y-axis		
PMD2-0	Sets the output pulse specification	ETW1-0	Sets the ERC output signal OFF timer time
	(+) (-)		0us 🗸 🗸
		STAM	CSTA signal input specification is Edge trigger (Level trigger when not checked)
<b>F1 M</b>		STPM	Sets the stop method by CSTP input signal
ELM	Sets the process when PEL or MEL input signal turns UN		Immediate stop 🗸 🗸
		FTM1-0	Selects the noise-filter characteristics of PEL, MEL, SD, ORG, ALM, INP input
SDM	Sets the process when SD input signal turns ON		Ignores inputs with pulse widths of 3.2us or less
SDIT	Latch SD input signal	INPL	INP input signal is in positive logic (Negative logic when not checked)
SDLI	SD input signal is in positive logic (Merative logic when not shocked)	LTCL	LTC input signal is at rising edge trigger (Falling edge trigger when not checked)
ODCI ODCI		POSL	PCS input signal is in positive logic (Negative logic when not checked)
URGL	URG input signal is in positive logic (Negative logic when not checked)	DRL	DR input signal is in positive logic (Negative logic when not checked)
ALMM	Sets the process when ALM input signal turns ON	FLTR	Insert the filter set in ETM1-0 to PEL MEL SD OBG ALM INP input signals
	Immediate stop	DDE	Depart relige_filters in PDP_MDP_RE insut signals
ALML	ALM input signal is in positive logic (Negative logic when not checked)	URF	
EROE	Outputs ERC signal when stopped immediately by EL,ALM,CEMG input signals	DTMF	Urn off the direction change timer (0.2ms)
EROR	Outputs ERC signal when origin return is completed	INTM	Mask the INT signal output
EPW2-0	Sets the output pulse width of EBC signal	PCSM	Set PCS input signal to CSTA signal for own axis only
	Level output v	PMSK	Mask the output pulses
ERCL	ERC output signal is in positive logic (Negative logic when not checked)		

Select a desired setting in the pull-down menus and check the menus. Then click "Write" and "Close" buttons. Write to RENV1 register and close "RENV1 (Environment setting 1)" menu screen.

You can also display this screen by clicking the "Detail setting" button in the main screen when writing RENV1 register.



Click the pull-down mark on the right side of the combo box to display the option items and click the item you need. Close "RENV1 (Environment setting 1)" menu screen by clicking the "Close" button or close mark at the upper right corner.



#### 4.3.8 "RENV2 (Environment setting 2) (H)" menu

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Click this "RENV2" menu to open the following screen. You can set the details in each bit of RENV2 register and write the data.

RENV2 =	80330055 h Operation	n target 🛛 🔘	X-axis	🔘 Y-axis				
POM1-0	Sets the specification of P0/FUP pi	ns				EOFF	Disables EA/EB input (Input error detection is also disabled)	
	General-purpose output				$\sim$	POFF	Disables PA/PB input (Input error detection is also disabled)	
P1M1-0	Sets the specification of P1/FDW p	in				EIM1-0	Sets the EA/EB input specification	
	General-purpose output				$\sim$		Counts up at EA rising edge, counts down at EB falling edge	~
P2M1-0	Sets the specification of P2/MVC p	in				EINF	Insert a noise filter to EA/EB/EZ inputs	
	General-purpose output				$\sim$	EDIR	Reverses the counting direction of EA/EB inputs	
P3M1-0	Sets the specification of P3/CP1 pi	n				PIM1-0	Sets the PA/PB input specification	
	General-purpose output				$\sim$		Counts up at PA rising edge, counts down at PB falling edge	`
P4M1-0	Sets the specification of P4/CP2 pi	n				PINF	Insert a noise filter to PA/PB inputs	
	General-purpose input				$\sim$	PDIR	Reverses the counting direction of PA/PB inputs	
P5M	Sets the specification of P5 pin					EZD3-0	Sets the EZ count value used for origin return	
	General-purpose input				$\sim$		up 0 Times down	
P6M	Sets the specification of P6 pin					EZL	EZ input signal is at rising edge (Falling edge when not checked)	
	General-purpose input				$\sim$	ORM	Selects the origin return method	
P7M	Sets the specification of P7 pin						Origin return operation0	_
	General-purpose input				$\sim$	IEND	Outputs INT signal when stopped	
CSPO	Outputs CSTA signal when comm	nand stops (wh	en RMD.	MSPO = 1)		MRST	Auto reset function of MSTSW, REST, RIST is not used	

Select the desired setting state in the pull-down menus and check the menus. Then, click "Write" and "Close" button. Write to RENV2 register, and close "RENV2 (Environment setting 2)" menu screen.

You can also display this screen by clicking the "Detail setting" button in the main screen when writing RENV2 register.

			x
X-axis 🔘 Y-axis			
	EOFF	Disables EA/EB input (Input error detection is also disabled)	
~	POFF	Disables PA/PB input (Input error detection is also disabled)	
	EIM1-0	Sets the EA/EB input specification	
~		Multiplies the 90-degree phase difference by 1	$\sim$
	EINF	Multiplies the 90-degree phase difference by 1 Multiplies the 90-degree phase difference by 2	
~	EDIR	Multiplies the 90-degree phase difference by 4 Counts up at EA rising edge counts down at EB falling edge	
	PIM1-0	Sets the PA/PB input specification	
~		Counts up at PA rising edge, counts down at PB falling edge	$\sim$
	PINF	Insert a noise filter to PA/PB inputs	
~	PDIR	Reverses the counting direction of PA/PB inputs	
	EZD9_0	Cara de 177 coma colos considados entres entres	

Click the pull-down mark on the right side of the combo box to display the option items and click the item you need. Close "RENV2 (Environment setting 2)" menu screen by clicking the "Close" button or close mark at the upper right corner. Since PCL6125-EB is serial-bus-interface base, the RENV2.MRST bit is fixed to 1.

In the PCL6125-EB evaluation kit, the P3 and P4 terminals are used for the excitation mode output circuit, and the P5, P6 and P7 terminals are used for the operation mode output circuit.



#### 4.3.9 "RENV3 (Environment setting 3) (I)" menu

Click this "RENV3" menu to open the following screen. You can set the details in each bit of RENV3 register and write the data.

RENV3 =	: 0000B000 h	Operation target	⊙ X-axis	○ Y-axis			
CIS1	Selects the input cou	nted by COUNTER1			C1S1-0	Selects the comparison method of Comparator1	
	Output pulse			· · · · ·	· ]	RCMP1 data < Comparison counter1	~
CIS2	Selects the input cou	nted by COUNTER2			C2S1-0	Selects the comparison method of Comparator2	
	EA/EB inputs				·	RCMP2 data > Comparison counter2	~
CU1H	Stops counting in	COUNTER1			SYO3-0	Selects the output timing of internal synchronous signals	
CU2H	Stops counting in	COUNTER2				Internal synchronous signal output OFF	~
CU1L CUNTER1 when COUNTER1 is latched		SYI1-0	Selects the input for start with an internal synchronous signal				
LOF1	Latching COUNTE	R1 by LTC signal input i	s disabled			Internal synchronous signal output by X axis	~
CU1R	Latches COUNTE	R1 when the origin return	operation is	completed	SLM1-0	Controls the software limit	
C1RM	Uses Comparator	1 to set COUNTER1 for r	ing counter o	peration		Stops the software limit	~
GU2L	Resets COUNTER	R2 when COUNTER2 is la	tched		SLOU	Selects the counter to control software limit	
LOF2	Latching COUNTE	R2 by LTC input signal i	s disabled			COUNTER1	~
GU2R	Latches COUNTE	R2 when the origin return	operation is	completed			
C2RM	Uses Comparator:	2 to set COUNTER2 for r	ing counter o	peration			
			Write			Close	

Select a desired setting state in the pull-down menus and check the menus. Then, click "Write" and "Close" button. Write to RENV3 register and close "RENV3 (Environment setting 3)" menu screen.

You can also display this screen by clicking the "Detail setting" button in the main screen when writing RENV3 register.

RENV3 (E	nvironment setting 3)				
RENV3 =	0000B000 h	Operation target 💿 X-axis 🔿 Y-axis			
CIS1	Selects the input cour	nted by COUNTER1			
	Output pulse	~			
CIS2 Output pulse					
EA/EB inputs					
CU1H	I Stops counting in COUNTER1				
CU2H	Stops counting in COUNTER2				
CU1L	11L Resets COUNTER1 when COUNTER1 is latched				
LOF1	Latching COUNTE	R1 by LTC signal input is disabled			
CU1R	Latches COUNTER	R1 when the origin return operation is completed			
C1RM	Uses Comparator	to set COUNTER1 for ring counter operation			
GU2L	Resets COUNTER	2 when COUNTER2 is latched			
LOF2	Latching COUNTE	R2 by LTC input signal is disabled			

Click the pull-down mark on the right side of the combo box to display the option items and click the item you need. Close " RENV3 (Environment setting 3)" menu screen by clicking the "Close" button or close mark at the upper right corner.

#### 4.3.10 "RENV4 (Environment setting 4) (J)" menu

Click this "RENV4" menu to open the following screen. You can set the details in each bit of RENV4 register and write the data.

RENV4 (E	nvironment setting 4)			x	
RENV4 =	00000000 h	Operation target	● X-axis	O Y−axis	
L3T2-0	Selects the input pin of the trigger signals lat	ched in RLTC3 register			
	Disable			~	
L3TL	Selects the input specification of the trigg	er signals latched in RLT(	08 register		
L3DT	Selects the counter latched in RLTC3 register				
L3MD	Selects the latch operation specification of RLTC3 register				
L3F1-0	Selects the input noise filter characteristic of the trigger signals latched in RLTC3 register           No filter (Input pulse width > CLK frequency)				
L4T2-0	Selects the input pin of the trigger signals lat	ched in RLTC4 register			
	Disable			~	
L4TL	Selects the input specification of the trigg	er signals latched in RLT(	04 register		
L4DT	Selects the counter latched in RLTC4 regi	ster			
L4MD	Selects the latch operation specification o	f RLTO4 register			
L4F1-0	Selects the input noise filter characteristic of No filter (Input pulse width > CLK frequency)	the trigger signals latche	d in RLTC4	register ~	

Select a desired setting state from the pull-down menu, check the menus. Then click the "Write" and "Close" button. Write to RENV4 register and close "RENV4 (Environment setting 4)" menu screen.

You can also display this screen by clicking the "Detail setting" button in the main screen when writing to RENV4 register.

RENV4 =	00000000 h	Operation target	● X-axis	○ Y-axis		
L3T2-0	Selects the input pin of the trigger signals la	tched in RLTC3 register				
	Disable			~		
L3TL	Disable					
	ORG pin					
LSDI	EZ pin					
L3MD	P5 pin					
L 3E 1-0	P6 pin					
201 1 0	No filter (Input pulse width > CLK frequency)			~		
L4T2-0	Selects the input pin of the trigger signals la	tched in RLTC4 register				
	P1 11					

Click the pull-down mark on the right side of the combo box to display the option items and click the item you need. Close "RENV4 (Environment setting 4)" menu screen by clicking the "Close" button or close mark at the upper right corner.

#### 4.3.11 "RIRQ (Specifies event interrupt factor) (K)" menu

Click this "RIRQ" menu to open the following screen. You can set the details in each bit of RIRQ register and write the data.

RIRQ =	00000000 h	Operation target	X-axis	○ Y-axis	
Sets the	bit corresponding to the	e event interrupts to "1"			
IREN	Stops normally				
IRNM	Writing to pre-regi	ster is enabled			
IRUS	Acceleration start	S			
IRUE	RUE 🗹 Acceleration ends				
IRDS	S Deceleration starts				
IRDE	Deceleration ends				
IRC1	D1 Comparator1 condition is met				
IRC2	2 □ Comparator2 condition is met				
IRLT	Latching the count	value by LTC input sign	al		
IROL	ORG input signal (	N			
IRSD	D SD input signal Of	4			
IRDR	PDR(PA) and MDP	R(PB) input signals are ch	nanged		
IRSA	CSTA input signal	ON			
IREZ	Stopped during de	celeration with "RENV2.)	ORM = 1"		
IRBY	Starts				
IRL3	Latches the count	value to RLTC3 register			
IRL4	Latches the count	value to RLTC4 register			

Select the desired setting state from the pull-down menu, check menu, and click the "Write" and "Close" button.

Write to RIRQ register and close "RIRQ (Event interrupt factor setting)" menu screen.

You can also display this screen by clicking the "Detail setting" button in the main screen when writing RIRQ register. Click "Close" button to end "RIRQ (event interrupt factor)" menu screen.

Close "RIRQ (event interrupt factor)" menu screen by clicking the "Close" button or close mark at the upper right corner.

## 4.3.12 "PRMG (Speed magnification rate) (L)" menu

Click this "PRMG" menu to open the following screen. You can set PRMG register by entering speed magnification rate you want to set.

PRMG =	000004AF	h [	Operat	ion target	● X-axis	⊖ Y-axis		
19.6608	MHz	Mae	nification	1		x		
Value se	t in the reg	ister ar	nd the actua	al				

Please enter the magnification you want in decimal number (you can set a value after the decimal point). The value of PRMG is calculated and displayed so that the magnification is realized based on the input. In addition, an actual magnification with this value is recalculated and displayed. You can write the value by clicking the "Write" and "Close" buttons. Write to PRMG register and close "PRMG (Speed magnification rate)" menu screen. You can also display this screen by clicking the "Detail setting" button when writing to PRMG register.

Close "PRMG (Speed magnification rate)" menu screen by clicking the "Close" button or close mark at the upper right corner.



#### 4.3.13 "Simple control (M)" menu

PRMG (Speed magnification rate) (L)	
Simple control (M)	<ul> <li>X-axis (X)</li> </ul>
Linear interpolation control (N)	Y-axis (Y)
reset (O)	00000000 h RLTC3

Click the "Simple control" menu to display X and Y axes in the following screen. You can set an operation pattern to perform a simple motion control.

Click "X-axis" menu to display only the X-axis and clicking "Y-axis" menu to display only the Y-axis.

When values (other than 0) are entered in RFH, RFL, RMV, RUR, (RDR) registers in the main screen, the values are displayed.



After the software is started (register values are not set), , the values shown below are displayed when the "Simple control (M)" menu is executed.

Start speed = 100 pps, Operation speed = 1000 pps, Feeding amount = 2000 pulse, Acceleration time = 1000 ms, Deceleration time = 1000 ms, operation mode = + direction continuous operation, linear acceleration/deceleration mode

o o oppo	Feeding amount 2000	pulse 19.6608 MHz	Constant speed	
000			S-curve speed	
pps			PRMV = 000007D0	h
			PRFL = 0064	h
			PRFH = 03E8	h
			PRUR = 2AA9	h
			PRDR = 0000	h
			PRMG = 04AF	h
	549pulse	549pulse	PRDP = 00000000	h
			PRMD = 00000000	h
			Operation mode	
			+ direction continuous	or
ſ			- direction continuous	

By clicking the "Execute" button, data will be written to each register and operation will begin. Close the "X-axis Simple control" menu screen by clicking close mark at the upper right corner.





After the software is started (register values are not set), , the values shown below are displayed when the "Simple control (M)" menu is executed.

Start speed = 100 pps, Operation speed = 1000 pps, Feeding amount=2000 pulse, Acceleration time = 1000 ms,

Deceleration time = 1000 ms, operation mode = + direction continuous operation, linear acceleration/deceleration mode



By clicking the "Execute" button, data will be written to each register and operation will begin. Close the "Y-axis Simple control" menu screen by clicking close mark at the upper right corner.

#### **4.3.13.1 Setting the frequency**

You can set the frequency of control pulses to operate a stepping motor. Please set the starting speed and the operation speed by decimal numbers respectively.



#### **4.3.13.2** Set the acceleration/deceleration time

Acceleration time and deceleration time can be set in milliseconds and decimal number.

If acceleration time and deceleration time are the same, the selection of the slow-down point is set automatically.

If acceleration time and the deceleration time are different, the selection of the slow-down point is set manually. So, you need to calculate the slow-down point value and write it in slow-down point register (PRDP).



#### 4.3.13.3 Set the feeding amount

You can set the number of control pulses to output.

1500pps	Feeding amount 2304	pulse	19.6608 MHz	Constant speed	
1500				S-curve speed	
pps				PRMV = 00000900	h

#### 4.3.13.4 Setting Acceleration/Deceleration characteristics

As acceleration/deceleration characteristics, you can select constant speed control, linear acceleration/deceleration control, or S-curve acceleration/deceleration control.





When you select constant speed control, the screen shows as follows.

	Feeding amount	2304	pulse	19.6608 MHz	Constant speed	aal
					PRMV = 00000900	h
					PRFL = 0190	h
_					PRFH = 05DC	h
					PRUR = 22E7	h
					PRDR = 0000	h
					PRMG = 04AF	h
					PRDP = 00000000	h
					PRMD = 00000041	h
					MOVE MODE	
					Positioning operation	
00						
pps					execute STC	ΟP
oupps					STAFL 🗸 STOP	3

When you select S-curve control, the screen shows as follows.



## 4.3.13.5 Check the value set in register

The following screen shows the values to be written in registers to realize the set values.

S-curve accel/de	ecel
Value set in the reg	sister
PRMV = 000007D0	h
PRFL = 0064	h
PRFH = 03E8	h
PRUR = 1554	h
PRDR = 0000	h
PRMG = 04AF	h
PRDP = 00000000	h
PRMD = 00000441	b
execute	

Please refer the above when you create a program to control PCL6125.



#### 4.3.13.6 Display the recalculation of operation time with the value set to register

The result of recalculated motion profile by the values set in the register is displayed as follows.



Pulses are calculated by integers, so the motion profile may be different than you have specified. Also, if you set an excessive value, an error will be occurred.



#### 4.3.13.7 Perform a set operation

You can select the settings for "operation mode" and "stop". "Execution" is determined by 4.3.13.4 Acceleration/deceleration characteristics setting.



"Operation mode" can be selected from 5 operations "Positioning operation", "+ direction continuous operation", "direction continuous operation", "+ direction origin return operation", and "- direction origin return operation". "Stop" can be selected from two actions "STOP" and "SDSTP".





After setting the operation pattern, when you click the "EXECUTE" button, the value of each register is written to PCL6125 and the set operation is performed once.

At this time, "FH high speed start" (STAUD: 53h) is written to PCL6125 as a start command for linear control and S-curve control, and "FL constant speed start" (STAFL: 50h) is written to PCL6125 for constant speed control.

If you click the "STOP" button during operation, it will stop immediately by selecting "STOP". At this time, "immediate stop" (STOP: 49h) is written to PCL6125 as a command.

Slow down stop with "SDSTP" selection. At this time, "Slow down stop" (SDSTP: 4Ah) is written to PCL6125 as a command.

If the end limit signal and alarm signal are ON when you click the "EXECUTE" button, it will not operate and an error message will be displayed. Turn off the end limit signal and alarm signal and click again.

Error	×
X-axis Error Check the status and extended status information!	
ОК	

Error	×
Y-axis Error Check the status and extended status information!	
ОК	

Error display for X-axis simple control

Error display for Y-axis simple control

Close the "Simple Control" menu screen by clicking the end mark on the upper right.



## 4.3.14 "Linear interpolation control (N)" menu

Click this menu to open the following screen. Set an operation pattern to execute a linear interpolation operation.



The default state is that the starting point is at cartesian coordinates (0, 0) and a linear interpolation to point 1 of coordinates (500, 500) with a feeding amount of  $\pm$  1000 can be executed.

Note: When using more than one monitor, be sure to operate the linear interpolation control in monitor 1.

#### 4.3.14.1 Change the feeding amount of cartesian coordinates

You can enter the feeding amount of X-axis (horizontal axis) and Y-axis (vertical axis) in cartesian coordinates in decimal numbers. Set a positive value in the columns. The negative value is fixed to the same value with a negative sign as the value specified in the input column of the positive side.





#### 4.3.14.2 Change the point position

You can move the point to an arbitrary position. Drag the cursor to the position with left clicking.



When the point is moved, the coordinate of the position is displayed on the right side of screen.



Click the left arrow to add 1 (+1) to X-axis (horizontal axis) and Y-axis (vertical axis) travel and click the right arrow to subtract 1 (-1).



#### 4.3.14.3 Increase or decrease the point

Click the "Add points" button to increase a point.



The increased point can be moved to any location using the same procedure. You can increase up to 11 points (including the start point).

Click "Delete points" button to reduce the points. It will delete points from the highest number in order. Point 1 and the start point cannot be deleted.

#### 4.3.14.4 When the points are overlapped

If the coordinates of points are the same, the previously displayed point will be invisible since it is placed behind the currently displayed point. In this case, right-click the overlapping point so that you can select the point to display as follows.



#### 4.3.14.5 Execute a linear interpolation

Set the point and click the "Execute" button.



Note: If the operation pattern is not set, it will not be executed. It is necessary to write an operation pattern to PCL6125 beforehand by performing "Simple control", etc.

#### **4.3.14.6** Display the register setting during an execution

During an execution, the actual values written to registers are displayed on the right side of the screen.



The set value is displayed when the value is written to PCL6125.

When the operation is completed, the state of buttons at the bottom right of the screen will change to "Set the next operation" clearly.



Command STAUD (53h)	Command STAUD (53h)
Execute	Execute
Set the next operation	Set the next operation
abort	abort
Save	Save

#### 4.3.14.7 Save the executed register values

Click the "Save" button to save the actual register settings as a text file by specifying the saving destination. The amount of cartesian coordinate feeding amount changed at this time is not initialized.

## 4.3.15 "Reset (O)" menu

Write the "Reset" command of the software to initialize PCL6125.



## 4.4 "Other (O)" menus

Click the "Other" menu to switch the language and to check the software version.

PCL6125 Evaluation Board						
File (F)	Tool (T)	Other (O)				
	)	Language (L)	•		Japanese (J)	
		Version (V)		~	English (E)	
MSTSW	0000 F	SSISW	001C	n		-000
DIA C	0004	DDM0/	0004			

## 4.4.1 "Language (L)" menu

Two languages, Japanese and English, can be selected. A check mark is placed in front of the selected language.

ファイル (F)	ツール (T)	Ę	の他 (O)						
	V		言語 (L	) 🕨	×	日本語 (J)		Бrh	
	~		バージョン	ン(V)		英語(E)	14	fΠ	
MSTSW	0000 h	_	SSISW	0010 h	-	14101.000	0000 h	SSTSW	0010 h
RMV	2304		PRMV	2304	٦	RMV	2304	PRMV	2304
RFL	400		PRFL	400	111	RFL	400	PRFL	400
RFH	1500		PRFH	1500	<b>۱</b> ۱۱	RFH	1500	PRFH	1500
RUR	8926		PRUR	8926	<b>i</b>	RUR	8926	PRUR	8926
RDR	0		PRDR	0	<b>1</b>	RDR	0	PRDR	0
RMG	1199		PRMG	1199	<b>1</b>	RMG	1199	PRMG	1199
RDP	0		PRDP	0	۶IJ	RDP	0	PRDP	0
RMD	00000041 h		PRMD	00000041 h	٦	RMD	00000041 h	PRMD	00000041 h
RIP	0		PRIP	0	۶IJ	RIP	0	PRIP	0
RUS	0		PRUS	0	<b>1</b>	RUS	0	PRUS	0
RDS	0		PRDS	0	]	RDS	0	PRDS	0
RENV1	0000F002 h		RIRQ	00000000 h	٦	RENV1	0000F002 h	RIRQ	00000000 h
RENV2	80000055 h		RLTC1	0	<b>۱</b> ۱۱	RENV2	80000055 h	RLTC1	0
RENV3	0000B002 h		RLTC2	0	<b>۱</b> ۱۱	RENV3	0000B002 h	RLTC2	0
RENV4	0		RLTC3	0	<b>i   </b>	RENV4	0	RLTC3	0
RCUN1	0		RLTC4	0	۶ I I	RCUN1	0	RLTC4	0
RCUN2	0		RSTS	00001800 h	<b>i</b>	RCUN2	0	RSTS	00001800 h
RCMP1	0		REST	00000000 h	<b>1</b>	RCMP1	0	REST	00000000 h
RCMP2	0		RIST	00000000 h		RCMP2	0	RIST	00000000 h
RCMP3	0		RPLS	0		RCMP3	0	RPLS	0
RCMP4	0		RSPD	0		RCMP4	0	RSPD	0
			RSDC	0	]			RSDC	0
SEL	COM	DA	νTx	\/##	(				
03	80 b	00	 ПЛ –			書辺	Ъ.	RGPD	FFFF h
00		20		$\sim$		84			

## 4.4.2 "Version (V)" menu

You can check the software version.



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#### Revision

Revision	Date	Contents
1st	March 3, 2020	Initial Release
2nd	June 15, 2021	<ul> <li>Software version (V1.20) <ol> <li>Added and changed "Command" to "SEL" and "COM".</li> <li>Added and changed "Data" to "DATx" and "DATy".</li> <li>Change the check box "Write to X-axis" to "X-axis" and the check box "Write to Y-axis" display to "Y-axis".</li> </ol> </li> <li>Corrected the following files by the above corrections 1, 2 and 3 Form1.cs[Design], Form1.cs, Form8.cs, Form9.cs, Form10.cs, Form11.cs, Form12.cs, Form13.cs, accessPCL.cs</li> <li>Corrected so as to select P0-P7 setting of environments setting 2</li> </ul>
3rd	December 13, 2023	<ul> <li>Software version (V1.30) <ul> <li>Added "execute" (STAFL for constant speed control, STAUD for linear control and S-curve control) and "STOP" (STOP/SDSTP) in X-axis simple control, Y-axis simple control with constant speed control, operation mode (positioning operation, + direction continuous operation, - direction continuous operation, + direction continuous operation, - direction origin return operation) (P22-P25).</li> <li>Added Error display when axis checkboxes are all unchecked (P9)</li> <li>Added Error display during X-axis simple control, Y-axis simple control operation(P26) and operation command (P10)</li> </ul> </li> </ul>
4th	July 24,2024	<ul> <li>Software version (V1.40)</li> <li>P5. PCL6125-EB_Application_V130JE → PCL6125-EB_Application_V140JE PCL6125-EB_Data001.pcl → PCL6125-EB_Data100.pcl</li> <li>P7. Added trouble display screen</li> <li>P12. Added "If you change the values of RMV/PRMV, RFL/PRFL, RFH/PRFH, RUR/PRUR, RDR/PRDR, or RMD/PRMD, movement amount, start speed, operation speed, acceleration time, deceleration time, linear acceleration/deceleration mode/S-curve acceleration/deceleration mode of the simple control operation will be set again. These will also be set again when the setting data file is loaded."</li> <li>P13. "PCL6125-EB_Data100.pcl" is a setting data file for PCL6125-EB.</li> <li>P23. P24. After the software is started (register values are not set), when the "Simple Control (M)" menu is executed</li> </ul>





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