Autonics
Sensors & Controllers

Motion Controller

PMC-2HSP/2HSN

Library Manual

PMC-2HSP/2HSN

Thank you for choosing our Autonics product.
Please read the following safety considerations before use.

Preface

Thank you very much for selecting Autonics products.

Please familiarize yourself with the information contained in the Safety Precautions section before using this product.

This user manual contains information about the product and its proper use, and should be kept in a place where it will be easy to access.

Library Manual Guide

- This user manual contains information about the product and its proper use, and should be kept in a place where it will be easy to access.
- Familiarize yourself with the information in this manual before using the product.
- This manual provides detailed information on the product's library. It does not offer any guarantee concerning matters beyond the scope of this manual.
- This manual may not be edited or reproduced in either part or whole without permission.
- A user manual is provided as part of the product package. Visit our home-page (www.autonics.com) to download a copy.
- The manual's content may vary depending on changes to the product's software and other unforeseen developments within Autonics, and is subject to change without prior notice.
- We contrived to describe this manual more easily and correctly. However, if there are any corrections or questions, please notify us these on our homepage.
- This manual provides usage examples of each function and program’s examples of MFC-based which is utilized functions .

Library Manual Symbols

Symbol	Description
Note	Supplementary information for a particular feature.
⚠ Warning	Failure to follow instructions can result in serious injury or death.
⚠ Caution	Failure to follow instructions can lead to a minor injury or product damage.
Ex.	An example of the concerned feature's use.
※1	Annotation mark.

Safety Considerations

- Please observe all safety considerations for safe and proper product operation to avoid hazards.
- Safety considerations are categorized as follows.

⚠ Warning	**Warning**	Failure to follow these instructions may result in serious injury or death.

⚠ Caution	**Caution**	Failure to follow these instructions may result in personal injury or product damage.

⚠ Warning

- Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss. (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)

  Failure to follow this instruction may result in personal injury, fire, or economic loss.
- Familiarize yourself with the information in this manual before using or installing the product. Failure to follow this instruction may result in mechanical losses, personal injury, or malfunction by operation mistakes.
- Do not use the unit where flammable or explosive gas, corrosive material, or direct ray of sun may be present. Failure to follow this instruction may result in electric shock, fire, personal injury, or economic loss.
- Install an emergency switch, or limit switch at the dangerous point before installing the unit. Failure to follow this instruction may result in personal injury, or economic loss.
- Install the unit after considering counter plan against power failure. Failure to follow this instruction may result in personal injury, or economic loss.
- Do not insert any objects such as materials at the openings of the unit. Failure to follow this instruction may result in fire, electric shock.
- Power supply should be rectified power by using insulation trans. Failure to follow this instruction may result in fire, electric shock, or personal injury.
- Check the rated power input specifications before supplying the power. Failure to follow this instruction may result in fire.
- Do not connect, maintain, or repair the unit when power is supplied to the unit. Failure to follow this instruction may result in electric shock, product damage, or malfunction.
- Do not turn off the power or remove the connector during operation. Failure to follow this instruction may result in personal injury or economic loss.
- Do not disassemble or modify the unit..Failure to follow this instruction may result in electric shock, or fire .

⚠ Caution

- Tighten the the power and signal cables on the unit firmly. Failure to follow this instruction may result in electric shock, or product damage.

- Tighten the screws between the power connector and the RS485 connector with max. 0.4N·m torque. Failure to follow this instruction may result in screw damage and poor contact.
- Use AWG28-16 cables for power cable. Failure to follow this instruction may result in fire.
- When using ribbon cable to I/O cable, connect the cable properly without poor connection by ribbon cable. Failure to follow this instruction may result in malfunction.
- Check the specifications and type of connector before connecting the unit. Failure to follow this instruction may result in fire, electric shock, or product damage.
- Use the unit within the rated specifications. Failure to follow this instruction may result in shorten the life cycle of the unit, or fire.
- Separate cables not to impact the noise from power, or load cables. Failure to follow this instruction may result in malfunction, or product damage.
- Do not use water or oil-based detergent when cleaning the unit. Failure to follow this instruction may result in electric shock, fire, or product damage.
- When disposing the unit, please categorize it as industrial waste.
- Note that this device is KC certified for commercial use. Make proper applications for the product.

Table of Contents

※For more detailed function and terms, refer to PMC-2HSP/PMC-2HSN user maual. Visit our website (www.autonics.com) to download it.

1 Reset

1.1 autpmc_Open

This function, autpmc_Open, is for connecting to PMC-2HSP/2HSN for communication.

(1) Syntax

```
int autpmc_Open(
int PortNum,
int BaudRate
);
```

(2) Parameter

- PortNum

  Enter serial port number to be connected.

- BaudRate

  Enter baudrate of serial port.

Item	Input	Description	Constant value
PMC_BAUDRATE	FPMC_BAUD_9600	9,600bps	9600
	FPMC_BAUD_19200	19,200bps	19200
	FPMC_BAUD_38400	38,400bps	38400
	FPMC_BAUD_57600	57,600bps	57600
	FPMC_BAUD_115200	115,200bps	115200

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_PORT	1	Unavailable or invalid input port is entered.
	FPMC_INVALID_BAUDRATE	2	Invalid baudrate is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define COMPORT 15

void main()
{

 int stat=0;
 int i;

 // Communication connection function of PMC-2HSP(N)
 // Return value : Returns FPMC_OK when executing the command normally.
 // Factor value: Serial port number, Serial port baudrate to be connected.
 // stat : Checks the status of connectable comport.

 for(i=0;i<COMPORT;i++)
 {
```

```
            switch(i)
            {
            case   0: stat = autpmc_Open( 0, FPMC_BAUD_115200 );
                       break;
            case   1: stat = autpmc_Open( 1, FPMC_BAUD_115200 );
                       break;
            case   2: stat = autpmc_Open( 2, FPMC_BAUD_115200 );
                       break;
            case   3: stat = autpmc_Open( 3, FPMC_BAUD_115200 );
                       break;
            case   4: stat = autpmc_Open( 4, FPMC_BAUD_115200 );
                       break;
            case   5: stat = autpmc_Open( 5, FPMC_BAUD_115200 );
                       break;
            case   6: stat = autpmc_Open( 6, FPMC_BAUD_115200 );
                       break;
            case   7: stat = autpmc_Open( 7, FPMC_BAUD_115200 );
                       break;
            case   8: stat = autpmc_Open( 8, FPMC_BAUD_115200 );
                       break;
            case   9: stat = autpmc_Open( 9, FPMC_BAUD_115200 );
                       break;
            case 10: stat = autpmc_Open(10, FPMC_BAUD_115200);
                       break;
            case 11: stat = autpmc_Open(11, FPMC_BAUD_115200);
                       break;
            case 12: stat = autpmc_Open(12, FPMC_BAUD_115200);
                       break;
            case 13: stat = autpmc_Open(13, FPMC_BAUD_115200);
                       break;
            case 14: stat = autpmc_Open(14, FPMC_BAUD_115200);
                       break;
            case 15: stat = autpmc_Open(15, FPMC_BAUD_115200);
                       break;
            }

            if (stat == FPMC_OK)
            {
                       printf("MESSAGE : Found and open 'PMC-2HSP(N) (ID=%d)'
ComPort\n", i);
            }
 }

}
```

1.2 autpmc_Reset

This function, autpmc_Reset, is for reseting motion IC by broadcast of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_Reset(
int PortNum,
char nNodeId
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range. Enter broadcast (0x80) and data transfers to every connected PMC-2HSP/2HSN and PC by broadcast function.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM           3

void main()
{

 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);

  Flag = autpmc_Reset (PORTNUM, Node01);

 if(Flag!=FPMC_OK)
 {
          printf("error!\n");
          return;
 }



 autpmc_Close(PORTNUM);
}
```

1.3 autpmc_IsCon

This function, autpmc_IsCon, is for checking normally transferring data by communicating PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_IsCon(
int PortNum,
char nNodeId,
BOOL *bOn
);
```

(2) Parameter

- PortNum

  Enter serial port number to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- bOn

  When command is successful, 1 is saved at data . When command is fail, 0 is saved at data .

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM           3

void main()
{
 int Flag=0; //Checking the operation status of the function.

 BOOL bOn=0; //Unit connection (connection ON(1), connection OFF(0))

 autpmc_Open(PORTNUM, FPMC_BAUD_115200); //Communication connection function


 //Function of checking connection PMC-2HSP(N)
 //Return value : Returns FPMC_OK when executing the command normally.
 //Factor : Status of setting node ID, unit connection: connection ON(1), connection OFF(0)

 Flag = autpmc_IsCon(PORTNUM, Node01, &bOn);

 printf("%d\n", bOn);

 if (bOn == 1)
 {
           printf("Connection!\n");
 }
 else
 {
            printf("Connection Failed\n");
 }

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }

 autpmc_Close(PORTNUM);
}
```

1.4 autpmc_SetBaudrate

This function, autpmc_SetBaudrate, is for changing baudrate of PMC-2HSP/2HSN by broadcast function.

(1) Syntax

```
int autpmc_SetBaudrate(
int PortNum,
char nNodeId,
int BaudRate
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range. Enter broadcast (0x80) and data transfers to every connected PMC-2HSP/2HSN and PC by broadcast function.

- BaudRate

  Enter baudrated to be changed.

Item	Input	Description	Constant value
PMC_BAUDRATE	FPMC_BAUD_9600	9,600bps	9600
	FPMC_BAUD_19200	19,200bps	19200
	FPMC_BAUD_38400	38,400bps	38400
	FPMC_BAUD_57600	57,600bps	57600
	FPMC_BAUD_115200	115,200bps	115200

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_BAUDRATE	2	Invalid baudrate is entered.
	FPMC_INVALID_NODE	3	Invalid node ID is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM          3

void main()
{

 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
```

```
  Flag = autpmc_SetBaudrate(PORTNUM, Node01, FPMC_BAUD_9600);

  if(Flag!=FPMC_OK)
  {
          printf("error!\n");
          return;
  }



  autpmc_Close(PORTNUM);
}
```

1.5 autpmc_ClrINCPos

This function, autpmc_ClrINCPos, is for reseting the relative position of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_ClrINCPos(
int PortNum,
char nNodeId,
char axis
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{

 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 Flag = autpmc_ClrINCPos(PORTNUM, Node01, FPMC_X_Y_AXIS);

 if(Flag!=FPMC_OK)
 {
           printf("error!\n");
           return;
 }


 autpmc_Close(PORTNUM);
}
```

1.6 autpmc_Timeout

This function, autpmc_Timeout, is for seting wait time of send/receive command of PMC-2HSP/2HSN. If there is no settings when loading the port value, it waits unlimitedly until all commands are received at the designated receive buffer. Set this function for setting wait time of the receive operation after period of time.

(1) Syntax

```
int autpmc_Timeout(
int PortNum,
int RITimeout,
int RTTimeoutMultiplier,
int RTTimeoutConstant,
int WTTimeoutMultiplier,
int WTTimeoutConstant
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- RITimeout(ReadIntervalTimeout)

  Read interval timeout is for setting the response time between byte and byte. If the next byte does not response within the set time, timeout occurs.

  Max. time interval between responsed 2 byte is set by ms unit.

  During read operation, the first byte is received and interval timeout starts. If 1 byte is received and next 1 byte is not received after read interval timeout, read operation is complete.

  Enter 0 not to set read interval timeout.

- RTTimeoutMultiplier(ReadTotalTimeoutMultiplier)

  Read total timeout multiplier is for setting read timeout value per byte and constant value by ms unit.

- RTTimeoutConstant(ReadTotalTimeoutConstant)

  Read total timeout constant is constant value for calculating total read timeout interval by ms unit.

  During each read operation, multipliy the value to ReadTotalTimeoutMultiplier and add the value to the number of read byte.

  If the number of read byte is ‘n’, calculate read timeout value as below formular.

  Read timeout(ms) = n×ReadTotalTimeoutMultiplier+ReadTotalTimeoutConstant

  Enter 0 for ReadTotalTimeoutMultiplier and ReadTotalTimeoutConstant not to use read timeout.

- WTTimeoutMultiplier(WriteTotalTimeoutMultiplier)

  Write total timeout multiplier is for setting multiplication factor to calculate total timeout for write operation by ms unit.

- WTTimeoutConstant(WriteTotalTimeoutConstant)

  Write total timeout constant is for using constant to calculate total timeout for write operation by ms unit.

  If the number of the sent byte, calculate write timeout value as below formular.

Write timeout(ms) = n×WriteTotalTimeoutMultiplier+WriteTotalTimeoutConstant

Enter 0 for WriteTotalTimeoutMultiplier and WriteTotalTimeoutConstant not to use write time.

※Set the appropriate timeout. If not, it takes too much time for reading data, or the unit cannot read data due to too short timeout.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_PORT	1	Unavailable port

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0; // Checks the operation status of the function.

 autpmc_Open(PORTNUM, FPMC_BAUD_115200); //Communicaton connection function

 Flag = autpmc_Timeout(PORTNUM, 0, 1, 1, 0, 0);    //Changes wait time of send/receive
command

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }

 autpmc_Close(PORTNUM); //Disconnect communication
}
```

2 Stop, End

2.1 autpmc_Close

This function, autpmc_Close, is for disconnecting communication of PMC-2HSP/2HSN.

(1) Syntax
int autpmc_Close(PORTNUM);

(2) Parameter
None

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_PORT	1	Unavailable port

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{

 int Flag=0; // Checks the operation status of the function.

  Flag = autpmc_Open(PORTNUM, FPMC_BAUD_115200); //Communicaton connection
function


 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM); //Disconnect communication.
}
```

2.2 autpmc_SlowStop

This function, autpmc_SlowStop, is for decelerating to stop PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SlowStop(
int PortNum,
char nNodeId,
char axis
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{

 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 Flag = autpmc_SlowStop(PORTNUM, Node01, FPMC_X_Y_AXIS);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }


 autpmc_Close(PORTNUM);
}
```

2.3 autpmc_EmgStop

This function, autpmc_EmgStop, is for stopping PMC-2HSP/2HSN emergently by broadcast function.

(1) Syntax

```
int autpmc_EmgStop(
int PortNum,
char nNodeId
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Enter broadcast (0x80) and data transfers to every connected PMC-2HSP/2HSN and PC by broadcast function.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{

 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_EmgStop(PORTNUM, Broadcast);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

3 Parameter Setting

3.1 autpmc_GetParaAll

This function, autpmc_GetParaAll, is for loading all setting values of PMC-2HSP/2HSN.

(1) Syntax

struct PMC_PARADATA *autpmc_GetParaAll(
int PortNum,
char nNodeId,
char axis,
PMC_PARADATA *pData
);

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- pData

  Loads and saves all parameters' information once.

Structure name	Variable format	Description	Data value
PMC_ PARADATA	int iErrorState	Check error status.	0 : The command is normally executed. 3 : Invalid node ID is entered. 4 : Invalid axis is entered. 5 : Invalid data is entered.
	BOOL bLmtStopMod[2]	Instant/Slow limit stop mode (X-axis : bLmtStopMod[0], Y-axis : bLmtStopMod[1])	0 : Instant 1 : Slow
	BOOL bLmtActLev[2]	Limit signal logic level low/high (X-axis : bLmtActLev [0], Y-axis : bLmtActLev [1])	0 : Low 1 : High
	BOOL bSCurve[2]	Enable/Disable S-curve acceleration/deceleration (X-axis : bSCurve [0], Y-axis : bSCurve [1])	0 : Disable 1 : Enable
	BOOL bEndPEnable[2]	Enable/Disable of drive end pulse (X-axis : bEndPEnable [0], Y-axis : bEndPEnable [1])	0 : Disable 1 : Enable

Structure name	Variable format	Description	Data value
	BOOL bDecValue[2]	Symmetry/Asymmetry of trapezoidal acceleration/deceleration drive (X-axis : bDecValue [0], Y-axis : bDecValue [1])	0 : Accel 1 : Decel
	BOOL bSofLmtEnable[2]	Enable/Disable of software limit (X-axis : bSofLmtEnable [0], Y-axis : bSofLmtEnable [1])	0 : Enable 1 : Disable
	BOOL bPowHomStart[2]	Enable/Disable automatic start of power-on home search (X-axis : bPowHomStart [0], Y-axis : bPowHomStart [1])	0 : Disable 1 : Enable
	BOOL bPowPgmStart[2]	Enable/Disable automatic start of power-on program (X-axis : bPowPgmStart [0], Y-axis : bPowPgmStart [1])	0 : Disable 1 : Enable
	BOOL bInput0Lev[2]	Active level low/high of general input 0 (X-axis : bInput0Lev [0], Y-axis : bInput0Lev [1])	0 : Low 1 : High
	BOOL bInput1Lev[2]	Active level low/high of general input 1 (X-axis : bInput1Lev [0], Y-axis : bInput1Lev [1])	0 : Low 1 : High
	int iPulseType	Pulse input method: 1PULSE, 2PULSE	1 : 1PULSE 2 : 2PULSE
	int iSpdMul[2]	Speed multiplier (X-axis : iSpdMul [0], Y-axis : iSpdMul [1])	1 to 500
	int iJrkSpd[2]	Jerk speed (X-axis : iJrkSpd [0], Y-axis : iJrkSpd [1])	1 to 65535
	int iAccSpdRate[2]	Acceleration rate (X-axis : iAccSpdRate [0], Y-axis : iAccSpdRate [1])	1 to 8000
	int iDecSpdRate[2]	Deceleration rate (X-axis : iDecSpdRate [0], Y-axis : iDecSpdRate [1])	1 to 8000
	int iStrSpd[2]	Start speed (X-axis : iStrSpd [0], Y-axis : iStrSpd [1])	1 to 8000
	int iDrvSpd[2]	Drive speed (X-axis : iDrvSpd [0], Y-axis : iDrvSpd [1])	1 to 8000
	int iDrvSpd1Pgm[2]	Drive speed 1 using at program mode (X-axis : iDrvSpd1Pgm [0], Y-axis : iDrvSpd1Pgm [1])	1 to 8000
	int iDrvSpd2Pgm[2]	Drive speed 2 using at program mode (X-axis : iDrvSpd2Pgm [0], Y-axis : iDrvSpd2Pgm [1])	1 to 8000
	int iDrvSpd3Pgm[2]	Drive speed 3 using at program mode (X-axis : iDrvSpd3Pgm [0], Y-axis : iDrvSpd3Pgm [1])	1 to 8000
	int iDrvSpd4Pgm[2]	Drive speed 4 using at program mode (X-axis : iDrvSpd4Pgm [0], Y-axis : iDrvSpd4Pgm [1])	1 to 8000
	int iTim1Pgm[2]	Post-timer 1 using at program	1 to 65535

Structure name	Variable format	Description	Data value
		mode (X-axis : iTim1Pgm [0], Y-axis : iTim1Pgm [1])	
	int iTim2Pgm[2]	Post-timer 2 using at program mode (X-axis : iTim2Pgm [0], Y-axis : iTim2Pgm [1])	1 to 65535
	int iTim3Pgm[2]	Post-timer 3 using at program mode (X-axis : iTim3Pgm [0], Y-axis : iTim3Pgm [1])	1 to 65535
	long lSofLmtP[2]	+ direction software limit (X-axis : lSofLmtP [0], Y-axis : lSofLmtP [1])	-8388608 to 8388607
	long lSofLmtM[2]	- direction software limit (X-axis : lSofLmtM [0], Y-axis : lSofLmtM [1])	- 8388608 to 8388607
	int iEndPWidth[2]	Drive end pulse width (X-axis : iEndPWidth [0], Y-axis : iEndPWidth [1])	1 to 65535
	int iPulSclNum[2]	Numerator of pulse scale (X-axis : iPulSclNum [0], Y-axis : iPulSclNum [1])	1 to 65535
	int iPulSclDen[2]	Denominator of pulse scale (X-axis : iPulSclDen [0], Y-axis : iPulSclDen [1])	1 to 65535
	BOOL bHomMod1[2]	Enable/Disable step 1 of home search mode (X-axis : bHomMod1 [0], Y-axis : bHomMod1 [1])	0 : Disable 1 : Enable
	BOOL bHomMod1Dir[2]	Step 1 search direction of home search mode (X-axis : bHomMod1Dir [0], Y-axis : bHomMod1Dir [1])	0 : + direction 1 : - direction
	BOOL bHomMod2[2]	Enable/Disable step 2 of home search mode (X-axis : bHomMod2 [0], Y-axis : bHomMod2 [1])	0 : Disable 1 : Enable
	BOOL bHomMod2Dir[2]	Step 2 search direction of home search mode (X-axis : bHomMod2Dir [0], Y-axis : bHomMod2Dir [1])	0 : + direction 1 : - direction
	BOOL bHomMod3[2]	Enable/Disable step 3 of home search mode (X-axis : bHomMod3 [0], Y-axis : bHomMod3 [1])	0 : Disable 1 : Enable
	BOOL bHomMod3Dir[2]	Step 3 search direction of home search mode (X-axis : bHomMod3Dir [0], Y-axis : bHomMod3Dir [1])	0 : + direction 1 : - direction
	BOOL bHomMod4[2]	Enable/Disable step 4 of home search mode (X-axis : bHomMod4 [0], Y-axis : bHomMod4 [1])	0 : Disable 1 : Enable
	BOOL bHomMod4Dir[2]	Step 4 search direction of home search mode (X-axis : bHomMod4Dir [0], Y-axis : bHomMod4Dir [1])	0 : + direction 1 : - direction

Structure name	Variable format	Description	Data value
	BOOL bHomEndPosClr[2]	Enable/Disable reset of position counter (X-axis : bHomEndPosClr [0], Y-axis : bHomEndPosClr [1])	0 : Disable 1 : Enable
	BOOL bHomSig0Lev[2]	Logic level low/high of near home signal(STOP 0) (X-axis : bHomSig0Lev [0], Y-axis : bHomSig0Lev [1])	0 : Low 1 : High
	BOOL bHomSig1Lev[2]	Logic level low/high of home signal(STOP1) (X-axis : bHomSig1Lev [0], Y-axis : bHomSig1Lev [1])	0 : Low 1 : High
	BOOL bHomSig2Lev[2]	Logic level low/high of encoder Z-phase signal(STOP2) (X-axis : bHomSig2Lev [0], Y-axis : bHomSig2Lev [1])	0 : Low 1 : High
	int iHomLowSpd[2]	Home search low speed (X-axis : iHomLowSpd [0], Y-axis : iHomLowSpd [1])	1 to 8000
	int iHomHighSpd[2]	Home search high speed (X-axis : iHomHighSpd [0], Y-axis : iHomHighSpd [1])	1 to 8000
	long lHomOffset[2]	High speed offset position of home search step 4 (X-axis : lHomOffset [0], Y-axis : lHomOffset [1])	0~8388607

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 PMC_PARADATA Data;    // Defining structure variable
 PMC_PARADATA *pData = &Data;

 autpmc_GetParaAll(PORTNUM, Node01, FPMC_X_Y_AXIS, pData);

 printf("X-axis Limit Stop Mode : %d\nY-axis Limit Stop Mode : %d\n", pData-
>bLmtStopMod[0], pData->bLmtStopMod[1]);

 if(pData->iErrorState!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

3.2 autpmc_GetParaOPMAll

This function, autpmc_GetParaOPMAll, is for loading the setting value of operation mode of PMC-2HSP/2HSN.

(1) Syntax

```
struct PMC_PARADATA *autpmc_GetParaOPMAll(
int PortNum,
char nNodeId,
char axis,
PMC_PARADATA *pData
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- pData

  Loads and saves the related parameters of operation mode once.

Structure name	Variable format	Description	Data value
PMC_ PARADATA	int iErrorState	Check error status.	0 : The command is normally executed. 3 : Invalid node ID is entered. 4 : Invalid axis is entered. 5 : Invalid data is entered.
	BOOL bLmtStopMod[2]	Limit stop mode Instant stop/Slow stop (X-axis : bLmtStopMod[0], Y-axis : bLmtStopMod[1])	0 : Instant 1 : Slow
	BOOL bLmtActLev[2]	Limit signal logic level low/high (X-axis : bLmtActLev [0], Y-axis : bLmtActLev [1])	0 : Low 1 : High
	BOOL bSCurve[2]	Enable/Disable S-curve acceleration/deceleration (X-axis : bSCurve [0], Y-axis : bSCurve [1])	0 : Disable 1 : Enable
	BOOL bEndPEnable[2]	Enable/Disable of drive end pulse (X-axis : bEndPEnable [0], Y-axis : bEndPEnable [1])	0 : Disable 1 : Enable

Structure name	Variable format	Description	Data value
	BOOL bDecValue[2]	Symmetry/Asymmetry of trapezoidal acceleration/ deceleration drive (X-axis : bDecValue [0], Y-axis : bDecValue [1])	0 : Accel 1 : Decel
	BOOL bSofLmtEnable[2]	Enable/Disable of software limit (X-axis : bSofLmtEnable [0], Y-axis : bSofLmtEnable [1])	0 : Enable 1 : Disable
	BOOL bPowHomStart[2]	Enable/Disable automatic start of power-on home search (X-axis : bPowHomStart [0], Y-axis : bPowHomStart [1])	0 : Disable 1 : Enable
	BOOL bPowPgmStart[2]	Enable/Disable automatic start of power-on program (X-axis : bPowPgmStart [0], Y-axis : bPowPgmStart [1])	0 : Disable 1 : Enable
	BOOL bInput0Lev[2]	Active level low/high of general input 0 (X-axis : bInput0Lev [0], Y-axis : bInput0Lev [1])	0 : Low 1 : High
	BOOL bInput1Lev[2]	Active level low/high of general input 1 (X-axis : bInput1Lev [0], Y-axis : bInput1Lev [1])	0 : Low 1 : High

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 PMC_PARADATA Data; //Defining structure variable
 PMC_PARADATA *pData = &Data;


 autpmc_GetParaOPMAll (PORTNUM, Node01, FPMC_X_Y_AXIS, pData);

 printf(" X-axis Limit Stop Mode : %d\n Y-axis Limit Stop Mode : %d\n", pData-
>bLmtStopMod[0], pData->bLmtStopMod[1]);

 if(pData->iErrorState!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

3.3 autpmc_GetParaPMAll

This function, autpmc_GetParaPMAll, is for loading the setting value of parameters of PMC-2HSP/2HSN.

(1) Syntax

struct PMC_PARADATA *autpmc_GetParaPMAll(
int PortNum,
char nNodeId,
char axis,
PMC_PARADATA *pData
);

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- pData

  Loads and saves all information of parameters once.

Structure name	Variable format	Description	Data value
PMC_ PARADATA	int iErrorState	Check error status.	0 : The command is normally executed. 3 : Invalid node ID is entered. 4 : Invalid axis is entered. 5 : Invalid data is entered.
	int iPulseType	Pulse input method: 1PULSE, 2PULSE	1 : 1PULSE 2 : 2PULSE
	int iSpdMul[2]	Speed multiplier (X-axis : iSpdMul [0], Y-axis : iSpdMul [1])	1 to 500
	int iJrkSpd[2]	Jerk speed (X-axis : iJrkSpd [0], Y-axis : iJrkSpd [1])	1 to 65535
	int iAccSpdRate[2]	Acceleration rate (X-axis : iAccSpdRate [0], Y-axis : iAccSpdRate [1])	1 to 8000
	int iDecSpdRate[2]	Deceleration rate (X-axis : iDecSpdRate [0], Y-axis : iDecSpdRate [1])	1 to 8000
	int iStrSpd[2]	Start speed (X-axis : iStrSpd [0], Y-axis : iStrSpd [1])	1 to 8000

Structure name	Variable format	Description	Data value
	int iDrvSpd[2]	Drive speed (X-axis : iDrvSpd [0], Y-axis : iDrvSpd [1])	1 to 8000
	int iDrvSpd1Pgm[2]	Drive speed 1 using at program mode (X-axis : iDrvSpd1Pgm [0], Y-axis : iDrvSpd1Pgm [1])	1 to 8000
	int iDrvSpd2Pgm[2]	Drive speed 2 using at program mode (X-axis : iDrvSpd2Pgm [0], Y-axis : iDrvSpd2Pgm [1])	1 to 8000
	int iDrvSpd3Pgm[2]	Drive speed 3 using at program mode (X-axis : iDrvSpd3Pgm [0], Y-axis : iDrvSpd3Pgm [1])	1 to 8000
	int iDrvSpd4Pgm[2]	Drive speed 4 using at program mode (X-axis : iDrvSpd4Pgm [0], Y-axis : iDrvSpd4Pgm [1])	1 to 8000
	int iTim1Pgm[2]	Post-timer 1 using at program mode (X-axis : iTim1Pgm [0], Y-axis : iTim1Pgm [1])	1 to 65535
	int iTim2Pgm[2]	Post-timer 2 using at program mode (X-axis : iTim2Pgm [0], Y-axis : iTim2Pgm [1])	1 to 65535
	int iTim3Pgm[2]	Post-timer 3 using at program mode (X-axis : iTim3Pgm [0], Y-axis : iTim3Pgm [1])	1 to 65535
	long lSofLmtP[2]	+ direction software limit (X-axis : lSofLmtP [0], Y-axis : lSofLmtP [1])	-8388608 to 8388607
	long lSofLmtM[2]	- direction software limit (X-axis : lSofLmtM [0], Y-axis : lSofLmtM [1])	-8388608 to 8388607
	int iEndPWidth[2]	Drive end pulse width (X-axis : iEndPWidth [0], Y-axis : iEndPWidth [1])	1 to 65535
	int iPulSclNum[2]	Numerator of pulse scale (X-axis : iPulSclNum [0], Y-axis : iPulSclNum [1])	1 to 65535
	int iPulSclDen[2]	Denominator of pulse scale (X-axis : iPulSclDen [0], Y-axis : iPulSclDen [1])	1 to 65535

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"
```

```
#define PORTNUM 3

void main()
{

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 PMC_PARADATA Data; //Defining structure variable
 PMC_PARADATA *pData = &Data;

 autpmc_GetParaPMAll (PORTNUM, Node01, FPMC_X_AXIS, pData);

 printf("PulseType : %d\n", pData->iPulseType);

 if(pData->bErrorState[0]||pData->bErrorState[1]!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

3.4 autpmc_GetParaHSMAll

This function, autpmc_GetParaHSMAll, is for loading all related parameters of home search mode at PMC-2HSP/2HSN.

(1) Syntax

```
struct PMC_PARADATA *autpmc_GetParaHSMAll(
int PortNum,
char nNodeId,
char axis,
PMC_PARADATA *pData
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- pData

  Loads and saves the related parmeters' information of home searchonce.

Structure name	Variable format	Description	Data value
PMC_ PARADATA	int iErrorState	Check error status.	0 : The command is normally executed. 3 : Invalid node ID is entered. 4 : Invalid axis is entered. 5 : Invalid data is entered.
	BOOL bHomMod1[2]	Enable/Disable step 1 of home search mode (X-axis : bHomMod1 [0], Y-axis : bHomMod1 [1])	0 : Disable 1 : Enable
	BOOL bHomMod1Dir[2]	Step 1 search direction of home search mode (X-axis : bHomMod1Dir [0], Y-axis : bHomMod1Dir [1])	0 : + direction 1 : - direction
	BOOL bHomMod2[2]	Enable/Disable step 2 of home search mode (X-axis : bHomMod2 [0], Y-axis : bHomMod2 [1])	0 : Disable 1 : Enable
	BOOL bHomMod2Dir[2]	Step 2 search direction of home search mode (X-axis : bHomMod2Dir [0], Y-axis : bHomMod2Dir [1])	0 : + 1 : -
	BOOL bHomMod3[2]	Enable/Disable step 3 of home search mode	0 : Disable 1 : Enable

Structure name	Variable format	Description	Data value
		(X-axis : bHomMod3 [0], Y-axis : bHomMod3 [1])	
	BOOL bHomMod3Dir[2]	Step 3 search direction of home search mode (X-axis : bHomMod3Dir [0], Y-axis : bHomMod3Dir [1])	0 : + 1 : -
	BOOL bHomMod4[2]	Enable/Disable step 4 ofhome search mode (X-axis : bHomMod4 [0], Y-axis : bHomMod4 [1])	0 : Disable 1 : Enable
	BOOL bHomMod4Dir[2]	Step 4 search direction of home search mode (X-axis : bHomMod4Dir [0], Y-axis : bHomMod4Dir [1])	0 : + 1 : -
	BOOL bHomEndPosClr[2]	Enable/Disable reset of position counter (X-axis : bHomEndPosClr [0], Y-axis : bHomEndPosClr [1])	0 : Disable 1 : Enable
	BOOL bHomSig0Lev[2]	Logic level low/high of near home signal(STOP 0) (X-axis : bHomSig0Lev [0], Y-axis : bHomSig0Lev [1])	0 : Low 1 : High
	BOOL bHomSig1Lev[2]	Logic level low/high of home signal(STOP1) (X-axis : bHomSig1Lev [0], Y-axis : bHomSig1Lev [1])	0 : Low 1 : High
	BOOL bHomSig2Lev[2]	Logic level low/high of encoder Z-phase signal(STOP2) (X-axis : bHomSig2Lev [0], Y-axis : bHomSig2Lev [1])	0 : Low 1 : High
	int iHomLowSpd[2]	Home search low speed (X-axis : iHomLowSpd [0], Y-axis : iHomLowSpd [1])	1 to 8000
	int iHomHighSpd[2]	Home search high speed (X-axis : iHomHighSpd [0], Y-axis : iHomHighSpd [1])	1 to 8000
	long lHomOffset[2]	High speed offset position of home search step 4 (X-axis : lHomOffset [0], Y-axis : lHomOffset [1])	0~8388607

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 PMC_PARADATA Data; //Defining structure variable
 PMC_PARADATA *pData = &Data;


 autpmc_GetParaHSMAll (PORTNUM, Node01, FPMC_X_Y_AXIS, pData);

 printf(" X-axis Step 1 Enable : %d\n Y-axis Step 1 Enable : %d\n", pData->bHomMod1[0],
pData->bHomMod1[1]);

 if(pData->bErrorState[0]||pData->bErrorState[1]!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

3.5 autpmc_GetLmtStopMod

This function, autpmc_GetLmtStopMod, is for loading the set limit stop mode at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_GetLmtStopMod(
int PortNum,
char nNodeId,
char axis,
BOOL *bStopType
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bStopType

  Loads FPMC_INSTANTSTOP(0) at instant stop setting. Loads FPMC_SLOWSTOP(1) at slop stop.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 BOOL StopType=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_GetLmtStopMod (PORTNUM, Node01, FPMC_X_AXIS, &StopType);

 printf("X-axis StopType : %d\n", StopType);

 if(Flag!=FPMC_OK)
 {
           printf("error!\n");
           return;
 }



 autpmc_Close(PORTNUM);
}
```

3.6 autpmc_GetLmtActLev

This function, autpmc_GetLmtActLev, is for loading the set limit signal logic level at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_GetLmtActLev(
int PortNum,
char nNodeId,
char axis,
BOOL *bLevel
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bLevel

  Loads FPMC_HIGH(1) when set logic level of limit input signal is high. Loads FPMC_LOW(0) when set logic level of limit input signal is low.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 BOOL bLevel=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_GetLmtActLev (PORTNUM, Node01, FPMC_X_AXIS, &bLevel);

 printf("X-axis bLevel : %d\n", bLevel);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

3.7 autpmc_GetSCurve

This function, autpmc_GetSCurve, is for loading enable/disable setting of S-curve acceleration/deceleration at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_GetSCurve(
int PortNum,
char nNodeId,
char axis,
BOOL *bEnable
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bEnable

  Loads FPMC_ENABLE(1) when S-curve acceleration/deceleration is set enable. Loads FPMC_DISABLE(0) when S-curve acceleration/deceleration is set disable.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 BOOL bEnable=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_GetSCurve (PORTNUM, Node01, FPMC_X_AXIS, &bEnable);

 printf("X-axis bEnable : %d\n", bEnable);

 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

3.8 autpmc_GetEndPEnable

This function, autpmc_GetEndPEnable, is for loading enable/disable setting of drive end pulse at PMC-2HSP/2HSN .

(1) Syntax

```
int autpmc_GetEndPEnable(
int PortNum,
char nNodeId,
char axis,
BOOL *bEnable
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bEnable

  Loads FPMC_ENABLE(1) when drive end pulse is set enable. Loads FPMC_DISABLE(0) when drive end pulse is set disable.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 BOOL bEnable=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_GetEndPEnable (PORTNUM, Node01, FPMC_X_AXIS, &bEnable);

 printf("X-axis bEnable : %d\n", bEnable);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

3.9 autpmc_GetDecValue

This function, autpmc_GetDecValue, is for loading setting of trapezoidal acceleration/ deceleration drive at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_GetDecValue(
int PortNum,
char nNodeId,
char axis,
BOOL *bEnable
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bEnable

  Loads FPMC_ACCEL(0) at acceleration setting. Loads FPMC_DECEL(1) at deceleration setting.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 BOOL bDec=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_GetDecValue (PORTNUM, Node01, FPMC_X_AXIS, &bDec);

 printf("X-axis bDec : %d\n", bDec);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

3.10 autpmc_GetSofLmtEnable

This function, autpmc_GetSofLmtEnable, is for loading enable/disable setting of software limit at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_GetSofLmtEnable(
int PortNum,
char nNodeId,
char axis,
BOOL *bEnable
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bEnable

  Loads FPMC_ENABLE(0) when software limit is set enable. Loads FPMC_DISABLE(1) when software limit is set disable.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 BOOL bEnable=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_GetSofLmtEnable (PORTNUM, Node01, FPMC_X_AXIS, &bEnable);

 printf("X-axis bEnable : %d\n", bEnable);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

3.11 autpmc_GetPowHomStart

This function, autpmc_GetPowHomStart, is for loading enable/disable setting of automatic start of power-on home search at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_GetPowHomStart(
int PortNum,
char nNodeId,
char axis,
BOOL *bEnable
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bEnable

  Loads FPMC_ENABLE(1) when automatic start of power-on home search is set enable.
  Loads FPMC_DISABLE(0) when automatic start of power-on home search is set disable.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 BOOL bEnable=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_GetPowHomStart (PORTNUM, Node01, FPMC_X_AXIS, &bEnable);

 printf("X-axis bEnable : %d\n", bEnable);

 if(Flag!=FPMC_OK)
 {
          printf("error!\n");
          return;
 }



 autpmc_Close(PORTNUM);
}
```

3.12 autpmc_GetPowPgmStart

This function, autpmc_GetPowPgmStart, is for loading enable/disable setting of automatic start of power-on program at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_GetPowPgmStart(
int PortNum,
char nNodeId,
char axis,
BOOL *bEnable
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bEnable

  Loads FPMC_ENABLE(1) when automatic start of power-on program is set enable. Loads FPMC_DISABLE(0) when automatic start of power-on program is set disable.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 BOOL bEnable=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_GetPowPgmStart (PORTNUM, Node01, FPMC_X_AXIS, &bEnable);

 printf("X-axis bEnable : %d\n", bEnable);

 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

3.13 autpmc_GetInputLev

This function, autpmc_GetInputLev, is for loading active level ofgeneral input 0, 1 at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_GetInputLev(
int PortNum,
char nNodeId,
char axis,
BOOL bInPort,
BOOL *bActLev
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bInPort

  Enter FPMC_INPORT0(0) to select general input 0. Enter FPMC_INPORT1(1) to select general input 1.

- bActLev

  Loads FPMC_LOW(0) when set active level is low. Loads FPMC_HIGH(1) when set active level is high.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Enters invalid data.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 BOOL bActLev=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_GetInputLev (PORTNUM, Node01, FPMC_X_AXIS, 0, &bActLev);

 printf("X-axis bActLev : %d\n", bActLev);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

3.14 autpmc_GetPulseType

This function, autpmc_GetPulseType, is for loading pulse input method(1PULSE/2PULSE) of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_GetPulseType(
int PortNum,
char nNodeId,
int *iPulseType
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- iPulseType

  Loads FPMC_1PULSETYPE(1) when pulse input method is 1PULSE. Loads FPMC_2PULSETYPE(2) when pulse input method is 2PULSE.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 int iPulseType=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_GetPulseType (PORTNUM, Node01, &iPulseType);

 printf("X-axis iPulseType : %d\n", iPulseType);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }
 autpmc_Close(PORTNUM);
}
```

3.15 autpmc_GetSpdMul

This function, autpmc_GetSpdMul, is for loading speed multiplier of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_GetSpdMul(
int PortNum,
char nNodeId,
char axis,
int *iSpdMul
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- iSpdMul

  Loads the set speed multiplier. (1 to 500)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 int iSpdMul=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 Flag = autpmc_GetSpdMul (PORTNUM, Node01, FPMC_X_AXIS, &iSpdMul);
 printf("X-axis iSpdMul : %d\n", iSpdMul);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

3.16 autpmc_GetJrkSpd

This functin, autpmc_GetJrkSpd, is for loading jerk speed of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_GetJrkSpd(
int PortNum,
char nNodeId,
char axis,
int *iJrkSpd
);
```

(2) Parameter

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- iJrkSpd

  Loads the set jerk. (1 to 65,535)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 int iJrkSpd=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 Flag = autpmc_GetJrkSpd (PORTNUM, Node01, FPMC_X_AXIS, &iJrkSpd);

 printf("X-axis iJrkSpd : %d\n", iJrkSpd);
 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

3.17 autpmc_GetAccSpdRate

This function, autpmc_GetAccSpdRate, is for loading acceleration rate of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_GetAccSpdRate(
int PortNum,
char nNodeId,
char axis,
int *iAccSpdRate
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- iAccSpdRate

  Loads the set acceleration rate. (1 to 8,000)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 int iAccSpdRate=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 Flag = autpmc_GetAccSpdRate (PORTNUM, Node01, FPMC_X_AXIS, &iAccSpdRate);
 printf("X-axis iAccSpdRate : %d\n", iAccSpdRate);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

3.18 autpmc_GetDecSpdRate

This function, autpmc_GetDecSpdRate, is for loading acceleration rate of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SetDecSpdRate(
int PortNum,
char nNodeId,
char axis,
int *iDecSpdRate
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- iDecSpdRate

  Loads the set acceleration rate. (1 to 8,000)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 int iDecSpdRate=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_GetDecSpdRate (PORTNUM, Node01, FPMC_X_AXIS, &iDecSpdRate);

 printf("X-axis iDecSpdRate : %d\n", iDecSpdRate);

 if(Flag!=FPMC_OK)
 {
           printf("error!\n");
           return;
 }



 autpmc_Close(PORTNUM);
}
```

3.19 autpmc_GetStrSpd

This function, autpmc_GetStrSpd, is for loading start speed of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_GetStrSpd(
int PortNum,
char nNodeId,
char axis,
int *iStrSpd
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- iStrSpd

  Loads the set start speed. (1 to 8,000)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 int iStrSpd=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_GetStrSpd (PORTNUM, Node01, FPMC_X_AXIS, &iStrSpd);

 printf("X-axis iStrSpd : %d\n", iStrSpd);

 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

3.20 autpmc_ GetCurDrvSpd

This function, autpmc_GetDrvSpd, is for loading current drive speed of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_GetCurDrvSpd(
int PortNum,
char nNodeId,
char axis,
int *iDrvSpd
);
```

(2) Parameter

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- iDrvSpd

  Loads the set drive speed. (1 to 8,000)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 int iDrvSpd=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_GetCurDrvSpd (PORTNUM, Node01, FPMC_X_AXIS, &iDrvSpd);

 printf("X-axis iDrvSpd : %d\n", iDrvSpd);
 if(Flag!=FPMC_OK)
 {
          printf("error!\n");
          return;
 }



 autpmc_Close(PORTNUM);
}
```

3.21 autpmc_GetDrvSpdPgm

This function, autpmc_GetDrvSpdPgm, is for loading drive speed of PMC-2HSP/2HSN for using at program mode.

(1) Syntax

```
int autpmc_GetDrvSpdPgm(
int PortNum,
char nNodeId,
char axis,
int nDrvIndex,
int *iDrvSpd
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nDrvIndex

  Enter drive speed index. The valiable value is 1 to 4.

- iDrvSpd

  Loads the set drive speed. (1 to 8,000)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 int iDrvSpd=0;
 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_GetDrvSpdPgm (PORTNUM, Node01, FPMC_X_AXIS, 1, &iDrvSpd);

 printf("X-axis iDrvSpd : %d\n", iDrvSpd);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

3.22 autpmc_GetTimPgm

This function, autpmc_GetTimPgm, is for loading post-timer of PMC-2HSP/2HSN for using at program mode.

(1) Syntax

```
int autpmc_GetTimPgm(
int PortNum,
char nNodeId,
char axis,
int nIndex,
int *iPostTim
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nIndex

  Enter post timer index. The valid value is 1 to 3.

- iPostTim

  Loads the set post timer. (1 to 8,000)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;
 int iPostTim=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_GetTimPgm (PORTNUM, Node01, FPMC_X_AXIS, 1, &iPostTim);

 printf("X-axis iPostTim : %d\n", iPostTim);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

3.23 autpmc_GetSofLmt

This function, autpmc_GetSofLmt, is for loading software limit of PMC-2HSP/2HSN. (proportion to pulse scale)

(1) Syntax

```
int autpmc_GetSofLmt(
int PortNum,
char nNodeId,
char axis,
int iDirection,
long *lSoftLmt
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- iDirection

  Enter FPMC_PLUS(0) to set '+' direction limit . Enter FPMC_MINUS(1) to set '-' direction limit.

- lSoftLmt

  Loads the set software limit. (-8,388,608 to 8,388,607)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Enters invalid data.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;
 long lSoftLmt=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_GetSofLmt (PORTNUM, Node01, FPMC_X_AXIS, 0, &lSoftLmt);

 printf("X-axis lSoftLmt : %ld\n", lSoftLmt);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

3.24 autpmc_GetEndPWidth

This function, autpmc_GetEndPWidth, is for loading drive end pulse width of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_GetEndPWidth(
int PortNum,
char nNodeId,
char axis,
int *iEndPWidth
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- iEndPWidth

  Load the set drive end pulse width. (1 to 65,535)

- Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(3) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 int iEndPWidth=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 Flag = autpmc_GetEndPWidth (PORTNUM, Node01, FPMC_X_AXIS, &iEndPWidth);
 printf("X-axis iEndPWidth : %d\n", iEndPWidth);

 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

3.25 autpmc_GetPulSclNum

This function, autpmc_GetPulSclNum, is for loading numerator of pulse scale of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_GetPulSclNum(
int PortNum,
char nNodeId,
char axis,
int *iPulScl
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- iPulScl

  Loads the set numerator of pulse scale. (1 to 65,535)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 int iPulScl=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_GetPulSclNum (PORTNUM, Node01, FPMC_X_AXIS, &iPulScl);

 printf("X-axis iPulScl : %d\n", iPulScl);

 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

3.26 autpmc_GetPulSclDen

This function, autpmc_GetPulSclDen, is for loading denominator of pulse scale of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_GetPulSclDen(
int PortNum,
char nNodeId,
char axis,
int *iPulScl
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- iPulScl

  Loads the set denominator of pulse scale. (1 to 65,535)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 int iPulScl=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_GetPulSclDen (PORTNUM, Node01, FPMC_X_AXIS, &iPulScl);

 printf("X-axis iPulScl : %d\n", iPulScl);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

3.27 autpmc_GetHomMod

This function, autpmc_GetHomMod, is for loading home search mode of PMC-2HSP/2HSN.

(1) Syntax

```
struct HOMMOD *autpmc_GetHomMod(
int PortNum,
char nNodeId,
char axis,
int nStepNo,
HOMMOD *pMode
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nStepNo

  Enter step number. The valid value is 1 to 4.

- pMode

  Loads enable/disable and direction of set home search mode.

Structure name	Variable format	Description	Data value
HOMMODE	BOOL bEnable[2] bEable[0] : X-axis bEable[1] : Y-axis	Enable/Disable home search	FPMC_ENABLE(1)/ FPMC_DISABLE(0)
	BOOL bDirection[2] bDirection [0] : X-axis bDirection [1] : Y-axis	Home search direction	FPMC_PLUS(0)/ FPMC_MINUS(1)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Enters invalid data.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"
```

```
#define PORTNUM 3

void main()
{

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 HOMMOD Mode; //Defining structure variable
 HOMMOD *pMode = &Mode;


 autpmc_GetHomMod (PORTNUM, Node01, FPMC_X_Y_AXIS, 1, pMode);

 printf(" X-axis bEnable : %d\n Y-axis bEnable : %d\n", pMode->bEnable[0], pMode-
>bEnable[1]);

 if(pMode->bErrorState[0]||pMode->bErrorState[1]!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

3.28 autpmc_GetHomEndPosClr

This function, autpmc_GetHomEndPosClr, is for loading enable/disable setting of position counter at the end of home search at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_GetHomEndPosClr(
int PortNum,
char nNodeId,
char axis,
BOOL *bClear
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bClear

  Loads FPMC_ENABLE(1) when using position counter reset. Loads FPMC_DISABLE(0) when not using position counter reset.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 BOOL bClear=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
	Flag = autpmc_GetHomEndPosClr (PORTNUM, Node01, FPMC_X_AXIS, &bClear);

	printf("X-axis bClear : %d\n", bClear);

	if(Flag!=FPMC_OK)
	{
		printf("error!\n");
		return;
	}



	autpmc_Close(PORTNUM);
}
```

3.29 autpmc_GetHomSigLev

This function, autpmc_GetHomSigLev, is for loading logic level of home signal at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_GetHomSigLev(
int PortNum,
char nNodeId,
char axis,
int nHomSigNo,
BOOL *bLevel
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nHomSigNo

  Enter FPMC_HSTOP0(0) to select near home signal, FPMC_HSTOP1(1) to select home signal, or FPMC_HSTOP2(2) to select encoder Z-phase signal.

- bLevel

  Loads FPMC_LOW(0) when set logic level of home signal is low. Loads FPMC_HIGH(1) when set logic level of home signal is high.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Enters invalid data.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;
 BOOL bLevel=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_GetHomSigLev (PORTNUM, Node01, FPMC_X_AXIS, 0, &bLevel);

 printf("X-axis bLevel : %d\n", bLevel);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

3.30 autpmc_GetHomSpd

This function, autpmc_GetHomSpd, is for loading home search speed of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_GetHomSpd(
int PortNum,
char nNodeId,
char axis,
BOOL bSpd,
int *iSpd
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bSpd

  Enter FPMC_LOW(0) for loading home search low speed. Enter FPMC_HIGH(1) for loading home search high speed.

- iSpd

  Loads the set home search speed. (1 to 8,000)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 int iSpd=0;
 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_GetHomSpd (PORTNUM, Node01, FPMC_X_AXIS, 0, &iSpd);

 printf("X-axis Low HomeSpeed : %d\n", iSpd);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

3.31 autpmc_GetHomOffset

This function, autpmc_GetHomOffset, is for loading high speed offset positon of home search step 4 at PMC-2HSP/2HSN. (proportion to pulse scale)

(1) Syntax

```
int autpmc_GetHomOffset(
int PortNum,
char nNodeId,
char axis,
long *lOffset
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- lOffset

  Loads the set high speed offset position of home search step 4. (0 to 8,388,607)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 long lOffset=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_GetHomOffset (PORTNUM, Node01, FPMC_X_AXIS, &lOffset);

 printf("X-axis HomeSearchOffset : %ld\n", lOffset);

 if(Flag!=FPMC_OK)
 {
           printf("error!\n");
           return;
 }



 autpmc_Close(PORTNUM);
}
```

3.32 autpmc_SetLmtStopMod

This function, autpmc_SetLmtStopMod, is for setting limit stop mode of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SetLmtStopMod(
int PortNum,
char nNodeId,
char axis,
BOOL bInstant
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bInstant

  Enter FPMC_INSTANT(0) for instant mode. Enter FPMC_SLOW(1) for slow mode.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Enters invalid data.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 Flag = autpmc_SetLmtStopMod(PORTNUM, Node01, FPMC_X_Y_AXIS,            0);
 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

3.33 autpmc_SetLmtActLev

This function, autpmc_SetLmtActLev, is for activating limit signal logic level of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SetLmtActLev(
int PortNum,
char nNodeId,
char axis,
BOOL bLmtActLev
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bLmtActLev

  Enter FPMC_HIGH(1) when logic level of limit input signal is high. Enter FPMC_LOW(0) when logic level of limit input signal is low.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Enter invalid data.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 Flag = autpmc_SetLmtActLev (PORTNUM, Node01, FPMC_X_Y_AXIS, 0);
 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

3.34 autpmc_SetSCurve

This function, autpmc_SetSCurve, is for setting enable/disable S-curve acceleration/deceleration at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SetSCurve(
int PortNum,
char nNodeId,
char axis,
BOOL bEnable
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bEnable

  Enter FPMC_ENABLE(1) to use S-curve acceleration/deceleration. Enter FPMC_DISABLE(0) not to use S-curve acceleration/deceleration .

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_SetSCurve (PORTNUM, Node01, FPMC_X_Y_AXIS,     0);

 if(Flag!=FPMC_OK)
 {
           printf("error!\n");
           return;
 }



 autpmc_Close(PORTNUM);
}
```

3.35 autpmc_SetEndPEnable

This function, autpmc_SetEndPEnable, is for setting enable/disable drive end pulse at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SetEndPEnable(
int PortNum,
char nNodeId,
char axis,
BOOL bEnable
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

(3) bEnable

Enter FPMC_ENABLE(1) to use drive end pulse. Enter FPMC_DISABLE(0) not to use drive end pulse.

(4) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(5) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_SetEndPEnable (PORTNUM, Node01, FPMC_X_Y_AXIS, 0);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

3.36 autpmc_SetDecValue

This function, autpmc_SetDecValue, is for setting symmetry/asymmetry of trapezoidal acceleration/deceleration drive at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SetDecValue(
int PortNum,
char nNodeId,
char axis,
BOOL bDec
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bDec

  Enter FPMC_ACCEL(0) to use acceleration. Enter FPMC_DECEL(1) to use deceleration.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 Flag = autpmc_SetDecValue (PORTNUM, Node01, FPMC_X_Y_AXIS, 0);
 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

3.37 autpmc_SetSofLmtEnable

This function, autpmc_SetSofLmtEnable, for setting enable/disable software limit at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SetSofLmtEnable(
int PortNum,
char nNodeId,
char axis,
BOOL bEnable
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bEnable

  Enter FPMC_ENABLE(0) to use software limit. Enter FPMC_DISABLE(1) not to use software limit.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_SetSofLmtEnable (PORTNUM, Node01, FPMC_X_Y_AXIS, 0);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

3.38 autpmc_SetPowHomStart

This function, autpmc_SetPowHomStart, is for setting enable/disable automatic start of power-on home search at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SetPowHomStart(
int PortNum,
char nNodeId,
char axis,
BOOL bEnable
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bEnable

  Enter FPMC_ENABLE(1) to use automatic start of power-on home search. Enter FPMC_DISABLE(0) not to use automatic start of power-on home search.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_SetPowHomStart (PORTNUM, Node01, FPMC_X_Y_AXIS, 0);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

3.39 autpmc_SetPowPgmStart

This function, autpmc_SetPowPgmStart, is for setting enable/disable automatic start of power-on program at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SetPowPgmStart(
int PortNum,
char nNodeId,
char axis,
BOOL bEnable
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bEnable

  Enter FPMC_ENABLE(1) to use automatic start of power-on program. Enter FPMC_DISABLE(0) not to use automatic start of power-on program.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_SetPowPgmStart (PORTNUM, Node01, FPMC_X_Y_AXIS, 0);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

3.40 autpmc_SetInputLev

This function, autpmc_SetInputLev, is for setting active level of general input 0, 1 at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SetInputLev(
int PortNum,
char nNodeId,
char axis,
BOOL bInPort,
BOOL bActLev
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bInPort

  Enter FPMC_INPORT(0) to set general input 0. Enter FPMC_INPORT1(1) to set general input 1.

- bActLev

  Enter FPMC_LOW(0) to set active level as low. Enter FPMC_HIGH(1) to set active level as high.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;
 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_SetInputLev (PORTNUM, Node01, FPMC_X_Y_AXIS, 0, 0);

 if(Flag!=FPMC_OK)
 {
           printf("error!\n");
           return;
 }



 autpmc_Close(PORTNUM);
}
```

3.41 autpmc_SetPulseType

This function, autpmc_SetPulseType, is for selecting pulse input method(1PULSE/2PULSE) of PMC-2HSP/2HSN.

(1) **Syntax**

```
int autpmc_SetPulseType(
int PortNum,
char nNodeId,
int iPulseType
);
```

(2) Parameter

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- iPulseType

  EnterFPMC_SETPULSE1(1) at 1PULSE input method. Enter FPMC_SETPULSE2(2) at 2PULSE input method.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_SetPulseType (PORTNUM, Node01, 1);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

3.42 autpmc_SetSpdMul

This function, autpmc_SetSpdMul, is for setting speed multiplier of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SetSpdMul(
int PortNum,
char nNodeId,
char axis,
int iSpdMul
);
```

(2) Parameter

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- iSpdMul

  Enter speed multiplier. The valid value is 1 to 500.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_SetSpdMul(PORTNUM, Node01, FPMC_X_Y_AXIS, 100);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

3.43 autpmc_SetJrkSpd

This function, autpmc_SetJrkSpd, is for setting jerk speed of PMC-2HSP/2HSN.

(1) Syntax

```
autpmc_SetJrkSpd(
int PortNum,
char nNodeId,
char axis,
int iJrkSpd
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- iJrkSpd

  Enter jerk speed. The valid value is 1 to 65,535.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 Flag = autpmc_SetJrkSpd (PORTNUM, Node01, FPMC_X_Y_AXIS, 1000);
 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

3.44 autpmc_SetAccSpdRate

This function, autpmc_SetAccSpdRate, is for setting acceleration rate of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SetAccSpdRate(
int PortNum,
char nNodeId,
char axis,
int iAccSpdRate
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- iAccSpdRate

  Enter acceleration rate. The valid value is 1 to 8,000.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 Flag = autpmc_SetAccSpdRate (PORTNUM, Node01, FPMC_X_Y_AXIS, 1000);
 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

3.45 autpmc_SetDecSpdRate

This function, autpmc_SetDecSpdRate, is for setting deceleration rate of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SetDecSpdRate(
int PortNum,
char nNodeId,
char axis,
int iDecSpdRate
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- iDecSpdRate

  Enter deceleration rate. The valid value is1 to 8,000.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 Flag = autpmc_SetDecSpdRate (PORTNUM, Node01, FPMC_X_Y_AXIS, 1000);
 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

3.46 autpmc_SetStrSpd

This function, autpmc_SetStrSpdRate, is for setting start speed of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SetStrSpd(
int PortNum,
char nNodeId,
char axis,
int iStrSpd
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- iStrSpd

  Enter start speed. The valid value is 1 to 8,000.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 Flag = autpmc_SetStrSpd(PORTNUM, Node01, FPMC_X_Y_AXIS, 1000);
 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

3.47 autpmc_ SetDrvSpd

This function, autpmc_SetDrvSpd, is for selecting drive speed of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SetDrvSpd(
int PortNum,
char nNodeId,
char axis,
int nDrvIndex
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nDrvIndex

  Enter drive speed index. The valid value is 1 to 4.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 Flag = autpmc_SetDrvSpd(PORTNUM, Node01, FPMC_X_AXIS, 1); //Select speed 1 to 4
 autpmc_ABSMove(PORTNUM, Node01, FPMC_X_AXIS, 10000);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

3.48 autpmc_SetDrvSpdPgm

This function, autpmc_SetDrvSpdPgm, is for setting drive speed of PMC-2HSP/2HSN for using program mode.

(1) Syntax

```
int autpmc_SetDrvSpdPgm(
int PortNum,
char nNodeId,
char axis,
int nDrvIndex,
int iDrvSpd
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nDrvIndex

  Enter drive speed index. The valid value is 1 to 4.

- iDrvSpd

  Enter drive speed. The valid value is 1 to 8,000.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;
 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_SetDrvSpdPgm(PORTNUM, Node01, FPMC_X_AXIS, 1, 1000);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

3.49 autpmc_SetTimPgm

This function, autpmc_SetTimPgm, is for setting post-timer of PMC-2HSP/2HSN for using at program mode.

(1) Syntax

```
int autpmc_SetTimPgm(
int PortNum,
char nNodeId,
char axis,
int nIndex,
int iPostTim
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nIndex

  Select post timer. The valid value is 1 to 3.

- iPostTim

  Enter post timer. The valid value is 1 to 65,535, and unit is ms.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;
 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_SetTimPgm (PORTNUM, Node01, FPMC_X_Y_AXIS, 1, 1000);

 if(Flag!=FPMC_OK)
 {
          printf("error!\n");
          return;
 }



 autpmc_Close(PORTNUM);
}
```

3.50 autpmc_SetSofLmt

This function, autpmc_SetSofLmt, is for setting software limit of PMC-2HSP/2HSN.

(proportion to pulse scale)

(1) Syntax

```
int autpmc_SetSftLmt(
int PortNum,
char nNodeId,
char axis,
int iDirection,
long lSoftLmt
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- iDirection

  Select ‘+’ or ‘–’ direction of each axis.

  Enter FPMC_SOFLMT_PLUS(0) to set software limit ‘+’ direction of each axis. Enter FPMC_SOFLMT_MINUS(1) to set software limit ‘-’ direction of each axis.

- lSoftLmt

  Enter software limit. The valid value is -8,388,608 to 8,388,607.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_SetSofLmt(PORTNUM, Node01, FPMC_X_Y_AXIS, 0, 8382607);

 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

3.51 autpmc_SetEndPWidth

This function, autpmc_SetEndPWidth, is for setting drive end pulse width of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SetEndPWidth(
int PortNum,
char nNodeId,
char axis,
int iEndPWidth
);
```

(2) Parameter

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- iEndPWidth

  Enter the width of drive end pulse. The valid value is 1 to 65,535, and unit is ms.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_SetEndPWidth (PORTNUM, Node01, FPMC_X_Y_AXIS, 1000);

 if(Flag!=FPMC_OK)
 {
		printf("error!\n");
```

```
                return;
        }


        autpmc_Close(PORTNUM);
}
```

3.52 autpmc_SetPulSclNum

This function, autpmc_SetPulScl, is for setting numerator of pulse scale at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SetPulSclNum(
int PortNum,
char nNodeId,
char axis,
int iPulScl
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- iPulScl

  Enter numerator of pulse scale. The valid value is 1 to 65,535.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 Flag = autpmc_SetPulSclNum (PORTNUM, Node01, FPMC_X_Y_AXIS, 1000);
 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

3.53 autpmc_SetPulSclDen

This function, autpmc_SetPulScl, is for setting denominator of pulse scale at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SetPulSclDen(
int PortNum,
char nNodeId,
char axis,
int iPulScl
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- iPulScl

  Enter denominator of pulse scale. The valid value is 1 to 65,535.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 Flag = autpmc_SetPulSclDen (PORTNUM, Node01, FPMC_X_Y_AXIS, 1000);
 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

3.54 autpmc_SetHomMod

This function, autpmc_SetHomMod, is for setting home search mode at PMC-2HSP/2HSN..

(1) Syntax

```
int autpmc_SetHomMod(
int PortNum,
char nNodeId,
char axis,
int nStepNo,
BOOL bEnable,
BOOL bDirection
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nStepNo

  Enter step number. The valid value is 1 to 4.

- bEnable

  Enter FPMC_ENABLE(1) to use home search. Enter FPMC_DISABLE(0) not to use home search.

- bDirection

  Enter FPMC_PLUS(0) to set ‘+’ search direction during home searching. Enter FPMC_MINUS(1) to set ‘-‘ search direction during home searching.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
```

```
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_SetHomMod(PORTNUM, Node01, FPMC_X_AXIS, 1, 1, 1);

 if(Flag!=FPMC_OK)
 {
           printf("error!\n");
           return;
 }



 autpmc_Close(PORTNUM);
}
```

3.55 autpmc_HomStop

This function, autpmc_HomStop, is for stopping home search mode at PMC-2HSP/SHSN.

(1) Syntax

```
int autpmc_HomStop(
int PortNum,
char nNodeId,
char axis
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE is returned when ID is out of range. Enter broadcast (0x80) and data transfers to every connected PMC-2HSP/2HSN and PC by broadcast function.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 autpmc_HomRun(PORTNUM, Node01, FPMC_X_AXIS); //Run home search mode

 Flag = autpmc_HomStop(PORTNUM, Node01, FPMC_X_AXIS); //Stop home search mode

 if(Flag!=FPMC_OK)
 {
              printf("error!\n");
              return;
 }



 autpmc_Close(PORTNUM);
}
```

3.56 autpmc_Step1Enable

This function, autpmc_Step1Enable, is for setting step 1 using of home search mode at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_Step1Enable(
int PortNum,
char nNodeId,
char axis,
BOOL bEnable
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bEnable

  Enter FPMC_ENABLE(1) to use home search. Enter FPMC_DISABLE(0) not to use home search.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_Step1Enable (PORTNUM, Node01, FPMC_X_Y_AXIS, 0);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

3.57 autpmc_Step2Enable

This function, autpmc_Step2Enable, is for setting step 2 using of home search mode at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_Step2Enable(
int PortNum,
char nNodeId,
char axis,
BOOL bEnable
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bEnable

  Enter FPMC_ENABLE(1) to use home search. Enter FPMC_DISABLE(0) to use home search.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_Step2Enable (PORTNUM, Node01, FPMC_X_Y_AXIS, 0);

 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

3.58 autpmc_Step3Enable

This function, autpmc_Step3Enable, is for setting step 3 using of home search mode at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_Step3Enable(
int PortNum,
char nNodeId,
char axis,
BOOL bEnable
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bEnable

  Enter FPMC_ENABLE(1) to use home search. Enter FPMC_DISABLE(0) not to use home search.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_Step3Enable (PORTNUM, Node01, FPMC_X_Y_AXIS, 0);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

3.59 autpmc_Step4Enable

This function, autpmc_Step4Enable, is for setting step 4 using of home search mode at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_Step4Enable(
int PortNum,
char nNodeId,
char axis,
BOOL bEnable
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bEnable

  Enter FPMC_ENABLE(1) to use home search. Enter FPMC_DISABLE(0) not to use home search.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_Step4Enable (PORTNUM, Node01, FPMC_X_Y_AXIS, 0);

 if(Flag!=FPMC_OK)
 {
          printf("error!\n");
          return;
 }



 autpmc_Close(PORTNUM);
}
```

3.60 autpmc_Step1Direction

This function, autpmc_Step1Direction, is for setting search direction of step 1 during home searching at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_Step1Direction(
int PortNum,
char nNodeId,
char axis,
BOOL bDirection
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bDirection

  Enter FPMC_PLUS(0) to set ‘+’ search direction during home searching. Enter FPMC_MINUS(1) to set ‘-‘ search direction during home searching.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_Step1Direction (PORTNUM, Node01, FPMC_X_Y_AXIS, 1);

 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

3.61 autpmc_Step2Direction

This function, autpmc_Step2Direction, is for setting search direction of step2 during home searching at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_Step2Direction(
int PortNum,
char nNodeId,
char axis,
BOOL bDirection
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bDirection

  Enter FPMC_PLUS(0) to set '+' search direction during home searching. Enter FPMC_MINUS(1) to set '-' search direction during home searching.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_Step2Direction (PORTNUM, Node01, FPMC_X_Y_AXIS, 1);

 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

3.62 autpmc_Step3Direction

This function, autpmc_Step3Direction, is for setting search direction of step 3 during home searching at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_Step3Direction(
int PortNum,
char nNodeId,
char axis,
BOOL bDirection
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bDirection

  Enter FPMC_PLUS(0) to set '+' search direction during home searching. Enter FPMC_MINUS(1) to set '-' search direction during home searching.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_Step3Direction (PORTNUM, Node01, FPMC_X_Y_AXIS, 1);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

3.63 autpmc_Step4Direction

This function, autpmc_Step4Direction, is for setting search direction of step 4 during home searching at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_Step4Direction(
int PortNum,
char nNodeId,
char axis,
BOOL bDirection
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bDirection

  Enter FPMC_PLUS(0) to set '+' search direction during home searching. Enter FPMC_MINUS(1) to set '-' search direction during home searching.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_Step4Direction (PORTNUM, Node01, FPMC_X_Y_AXIS, 1);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

3.64 autpmc_SetHomEndPosClr

This function, autpmc_SetHomEndPosClr, is for resetting position counter at the end of home search at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SetHomEndPosClr(
int PortNum,
char nNodeId,
char axis,
BOOL bEnable
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bEnable

  Enter FPMC_ENABLE(1) to use position counter reset. Enter FPMC_DISABLE(0) not to use position counter reset.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_SetHomEndPosClr (PORTNUM, Node01, FPMC_X_Y_AXIS, 0);

 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

3.65 autpmc_SetHomSigLev

This function, autpmc_SetHomSigLev, is for setting logic level of home signal at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SetHomSigLev(
int PortNum,
char nNodeId,
char axis,
int nHomSigNo,
BOOL bLevel
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nHomSigNo

  Enter FPMC_HSTOP0(0) to select near home signal, FPMC_HSTOP1(1) to select home signal, or FPMC_HSTOP2(2) to select encoder Z-phase signal.

- bLevel

  Enter FPMC_LOW(0)to set as low. Enter FPMC_HIGH(1) to set as high.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_SetHomSigLev (PORTNUM, Node01, FPMC_X_Y_AXIS, 0, 0);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

3.66 autpmc_SetHomSpd

This function, autpmc_SetHomSpd, is for setting home search speed of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SetHomSpd(
int PortNum,
char nNodeId,
char axis,
BOOL bSpd,
int iSpd
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bSpd

  Enter FPMC_LOW(0) to set home search low speed. Enter FPMC_HIGH(1) to set home search high speed.

- iSpd

  Enter home search speed. The valid value is 1 to 8,000.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;
 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_SetHomSpd(PORTNUM, Node01, FPMC_X_Y_AXIS, 0, 1000);

 if(Flag!=FPMC_OK)
 {
           printf("error!\n");
           return;
 }



 autpmc_Close(PORTNUM);
}
```

3.67 autpmc_SetHomOffset

This function, autpmc_SetHomOffset, is for setting high speed offset position of home search step 4 at PMC-2HSP/2HSN. (proportion to pulse scale)

(1) Syntax

```
int autpmc_SetHomOffset(
int PortNum,
char nNodeId,
char axis,
long lOffset
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- lOffset

  Enters high speed offset position of home search step 4. The valid value is 0 to 8,388,607.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 Flag = autpmc_SetHomOffset(PORTNUM, Node01, FPMC_X_Y_AXIS, 1000);
 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

4 I/O Control

4.1 autpmc_GetParallelIO

This function, autpmc_GetParallelIO, is for loading Parallel I/F connector(CN3) input signal of PMC-2HSP/2HSN

(1) Syntax

```
struct PARALLELSTATE *autpmc_GetParallelIO(
int PortNum,
char nNodeId,
PARALLELSTATE *pState
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- pState

  Loads signal of Parallel I/F and saves it current variable.

Structure name	Variable format	Description	Data value
PARALLEL STATE	BOOL HOME;	Start home search	0 : OFF/ 1 : ON
	BOOL STROBE;	Start drive	0 : OFF/ 1 : ON
	BOOL X;	Designate X-axis / jog 2 mode Y+	0 : OFF/ 1 : ON
	BOOL Y;	Designate Y-axis / jog 2 mode Y+	0 : OFF/ 1 : ON
	BOOL MODE0;	Designate step 0/ Run+/ jog 2 mode X+	0 : OFF/ 1 : ON
	BOOL MODE1;	Designate step 1/ Run-/ jog 2 mode X-	0 : OFF/ 1 : ON
	BOOL STEPSL0;	Designate step 2/ Designate drive speed 0	0 : OFF/ 1 : ON
	BOOL STEPSL1;	Designate step 3/ Designate drive speed 1	0 : OFF/ 1 : ON
	BOOL STEPSL2;	Designate step 4/ Designate jog	0 : OFF/ 1 : ON
	BOOL STEPSL3;	Designate step 5/ stop drive	0 : OFF/ 1 : ON
	BOOL STEPSL4;	Designate run mode 0	0 : OFF/ 1 : ON
	BOOL STEPSL5;	Designate run mode 1	0 : OFF/ 1 : ON

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.

(4) Example

```
#include <stdio.h>
```

```
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 PARALLELSTATE State;    //Defining structure variable
 PARALLELSTATE *pState = &State;

 autpmc_GetParallelIO(PORTNUM, Node01, pState);

 printf("start home search : %d\n", pState->HOME);

 if(pState->bErrorState!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

4.2 autpmc_GetAxisIO

This function, autpmc_GetAxisIO, is for loading I/O connector signal of X-axis(CN4) and Y-axis(CN5) at PMC-2HSP/2HSN.

(1) Syntax

```
struct AXISSTATE *autpmc_GetAxisIO(
int PortNum,
char nNodeId,
char axis,
AXISSTATE *pState
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- pState

  Loads I/O signal of CN4 X-axis or CN5 Y-axis and saves it at current variable.

Structure name	Variable format	Description	Data value
PARALLEL STATE	BOOL bHomSig0[2];	Near home (X-axis : bHomSig0 [0], Y-axis : bHomSig0 [1])	0 : OFF/ 1 : ON
	BOOL bHomSig1[2];	Home (X-axis : bHomSig1 [0], Y-axis : bHomSig1 [1])	0 : OFF/ 1 : ON
	BOOL bHomSig2[2];	Encoder Z-phase (X-axis : bHomSig2 [0], Y-axis : bHomSig2 [1])	0 : OFF/ 1 : ON
	BOOL LmtP[2];	Limit+ (X-axis : LmtP [0], Y-axis : LmtP [1])	0 : OFF/ 1 : ON
	BOOL LmtM[2];	Limit- (X-axis : LmtM [0], Y-axis : LmtM [1])	0 : OFF/ 1 : ON
	BOOL EMG[2];	EMG (X-axis : EMG [0], Y-axis : EMG [1])	0 : OFF/ 1 : ON
	BOOL bInput0Lev[2];	general input0 (X-axis : bInput0Lev [0], Y-axis : bInput0Lev [1])	0 : OFF/ 1 : ON
	BOOL bInput1Lev[2];	general input1 (X-axis : bInput1Lev [0], Y-axis : bInput1Lev [1])	0 : OFF/ 1 : ON

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 AXISSTATE State;            //Defining structure variable
 AXISSTATE *pState = &State;

 autpmc_GetAxisIO (PORTNUM, Node01, FPMC_X_AXIS, pState);

 printf(" X-axis near home : %d\n Y-axis near home : %d\n", pState->bHomSig0[0], pState-
>bHomSig0[1]);

 if(pState->bErrorState[0]||pState->bErrorState[1]!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

4.3 autpmc_SetUserOut

This function, autpmc_SetUserOut, is for turnning ON/OFF X-axis general output 0/1 pin of CN4 connector or Y-axis general output 0/1 pin of CN5 connector at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_SetUserOut(
int PortNum,
char nNodeId,
char axis,
BOOL bPort,
BOOL bOn
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bPort

  Enter FPMC_OUTPORT0(0) to set general output 0 pin, or FPMC_OUTPORT1(1) for general output 1 pin.

- bOn

  Enter FPMC_ON(1) to turn ON corresponding general output port pin. Enter FPMC_OFF(0) to turn OFF corresponding general output port pin.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;
 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_SetUserOut(PORTNUM, Node01, FPMC_X_Y_AXIS, 0, 0);

 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

4.4 autpmc_GetCurPos

This function, autpmc_GetCurPos, is for loading current coordinate of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_GetCurPos(
int PortNum,
char nNodeId,
char axis,
long *lCurPos
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- lCurPos

  Loads current coordinate. (-8,388,608 to 8,388,607)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
nNodeId#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 long lCurPos=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 Flag = autpmc_GetCurPos (PORTNUM, Node01, FPMC_X_AXIS, &lCurPos);
 printf("current position : %ld\n", lCurPos);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

4.5 autpmc_GetCurPgmNo

This function, autpmc_GetCurPgmNo, is for loading currently running program step of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_GetCurPgmNo(
int PortNum,
char nNodeId,
char axis,
int *iCurPgmNo
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- iCurPgmNo

  Loads currently running program step. (0 to 199)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 int iCurPgmNo=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_GetCurPgmNo (PORTNUM, Node01, FPMC_X_AXIS, &iCurPgmNo);

 printf("Running Program Step : %d\n", iCurPgmNo);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

4.6 autpmc_GetErrorSt

This function, autpmc_GetErrorSt, is for loading error status of PMC-2HSP/2HSN.

(1) Syntax

```
struct PMC_ERRORSTATE *autpmc_GetErrorSt(
int PortNum,
char nNodeId,
char axis,
PMC_ERRORSTATE *pError
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- pError

  Load current error status.

Structure name	Variable format	Description	Data value
PMC_ ERRORSTATE	int iErrorState	Check error status.	FPMC_OK(0) : The command is normally executed. FPMC_INVALID_NODE(3) : Invalid node ID is entered. FPMC_INVALID_AXIS(4) : Invalid axis is entered. FPMC_INVALID_DATA)(5) : Invalid data is entered.
	BOOL bSofLmtErrP[2] 1. bSofLmtErrP[0] -> X-axis 2. bSofLmtErrP[1] -> Y-axis	Software limit + error	FPMC_ON(1)/ FPMC_OFF(0)
	BOOL bSofLmtErrM[2] 1. bSofLmtErrM[0] -> X-axis 2. bSofLmtErrM[1] -> Y-axis	Software limit - error	FPMC_ON(1)/ FPMC_OFF(0)
	BOOL bHardLmtErrP[2] 1. bHardLmtErrP[0] -> X-axis 2. bHardLmtErrP[1] -> Y-axis	Hardware limit + error	FPMC_ON(1)/ FPMC_OFF(0)
	BOOL bHardLmtErrM[2] 1. bHardLmtErrM[0] -> X-axis 2. bHardLmtErrM[1] -> Y-axis	Hardware limit - error	FPMC_ON(1)/ FPMC_OFF(0)
	BOOL bEmgErr[2] 1. bEmgErr[0] -> X-axis 2. bEmgErr[1] -> Y-axis	Emergency stop error	FPMC_ON(1)/ FPMC_OFF(0)
	BOOL bPgmErr[2]	Program	FPMC_ON(1)/

Structure name	Variable format	Description	Data value
	1. bPgmErr[0] -> X-axis 2. bPgmErr[1] -> Y-axis	mode error	FPMC_OFF(0)
	BOOL bHomErr[2] 1. bHomErr[0] -> X-axis 2. bHomErr[1] -> Y-axis	Home search mode error	FPMC_ON(1)/ FPMC_OFF(0)
	BOOL bInxErr[2] 1. bInxErr[0] -> X-axis 2. bInxErr[1] -> Y-axis	Index error	FPMC_ON(1)/ FPMC_OFF(0)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 PMC_ERRORSTATE   Error;          //Defining structure variable
 PMC_ERRORSTATE   *pError = &Error;

 autpmc_GetErrorSt (PORTNUM, Node01, FPMC_X_Y_AXIS, pError);

 printf(" X-axis software limit + error : %d\n Y-axis software limit + error : %d\n", pError-
>bSofLmtErrP[0], pError->bSofLmtErrP[1]);

 if(pError->bErrorState[0]||pError->bErrorState[1]!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

4.7 autpmc_IsRun

This function, autpmc_IsRun, is for loading current running status of PMC-2HSP/2HSN.

(1) Syntax

```
struct PMC_RUNSTATE *autpmc_IsRun(
int PortNum,
char nNodeId,
char axis,
PMC_RUNSTATE *pRun
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- pRun

  Loads current running status.

Structure name	Variable format	Description	Data value
PMC_RUNSTATE	int iErrorState	Check error status.	0 : The command is normally executed. 3 : Invalid node ID is entered. 4 : Invalid axis is entered. 5 : Invalid data is entered.
	BOOL bHomIsRun[2] 1. bHomIsRun[0] ->X-axis 2. bHomIsRun[1] ->Y-axis	Run X-axis home search mode	1 : ON 0 : OFF
	BOOL bJogIsRun[2] 1. bJogIsRun[0] ->X-axis 2. bJogIsRun[1] ->Y-axis	Run X-axis jog mode	1 : ON 0 : OFF
	BOOL bPgmIsRun[2] 1. bPgmIsRun[0] ->X-axis 2. bPgmIsRun[1] ->Y-axis	Run X-axis program mode	1 : ON 0 : OFF

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 PMC_RUNSTATE Run; //Defining structure variable
 PMC_RUNSTATE *pRun = &Run;


 autpmc_IsRun (PORTNUM, Node01, FPMC_X_Y_AXIS, pRun);

printf(" running X-axis home search mode : %d\n running Y-axis home search mode : %d\n",
pRun->bHomIsRun[0], pRun->bHomIsRun[1]);

 if(pRun->bErrorState[0]||pRun->bErrorState[1]!=FPMC_OK)
 {
           printf("error!\n");
           return;
 }



 autpmc_Close(PORTNUM);
}
```

4.8 autpmc_GetModName

This function, autpmc_GetModName, is for loading the model of PMC-2HSP/2HSN.

(1) Syntax

```
struct PMC_SOFTVERSION *autpmc_GetModName(
int PortNum,
char nNodeId,
PMC_SOFTVERSION *pVersion
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- pVersion

  Loads the model.

Structure name	Variable format	Description	Data value
PMC_SOFTVERSION	int iErrorState	Check error status.	0 : The command is normally executed. 3 : Invalid node ID is entered. 4 : Invalid axis is entered. 5 : Invalid data is entered.
	char cModName[12];	Loads the model.	PMC-2HSP-USB PMC-2HSP-485 PMC-2HSN-USB PMC-2HSN-485

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 PMC_SOFTVERSION   Version; //Defining structure variable
 PMC_SOFTVERSION   *pVersion = &Version;


 autpmc_GetModName (PORTNUM, Node01, pVersion);
 printf("Model Name: %s\n", pVersion->cModName);

 if(pVersion->bErrorState!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

4.9 autpmc_GetSofVer

This function, autpmc_GetSofVer, is for loading firmware version of PMC-2HSP/2HSN.

(1) Syntax

```
struct PMC_SOFTVERSION *autpmc_GetSofVer(
int PortNum,
char nNodeId,
PMC_SOFTVERSION *pVersion
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- pVersion

  Loads current firmware version. Version format is 4 digits for year, 2 digits for month, 2 digits for day.

  E.g.) 20091009 2009. Oct. 09th version

Structure name	Variable format	Description	Data value
PMC_ PARADATA	int iErrorState	Check error status.	FPMC_OK(0) : The command is normally executed. FPMC_INVALID_NODE(3) : Invalid node ID is entered. FPMC_INVALID_AXIS(4) : Invalid axis is entered. FPMC_INVALID_DATA)(5) : Invalid data is entered.
	char cSofVer[8];	Firmware version	yyyymmdd

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 PMC_SOFTVERSION Version; //Defining structure variable
 PMC_SOFTVERSION *pVersion = &Version;
 autpmc_GetSofVer (PORTNUM, Node01, pVersion);

 printf("Software Version: %s\n", pVersion->cSofVer);

 if(pVersion->bErrorState!=FPMC_OK)
 {
           printf("error!\n");
           return;
 }



 autpmc_Close(PORTNUM);
}
```

5 Movement

5.1 autpmc_HomRun

This function, autpmc_HomRun, is for running home search mode at PMC-2HSP/SHSN.

(1) Syntax

```
int autpmc_HomRun(
int PortNum,
char nNodeId,
char axis
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

  Enter broadcast (0x80) and data transfers to every connected PMC-2HSP/2HSN and PC by broadcast function.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_HomRun(PORTNUM, Node01, FPMC_X_Y_AXIS);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

5.2 autpmc_ABSMove

This function, autpmc_ABSMove, is for moving to absolute position by a specified distance from home at PMC-2HSP/2HSN. (proportion to pulse scale)

(1) Syntax

```
int autpmc_ABSMove(
int PortNum,
char nNodeId,
char axis,
long lPos
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- lPos

  Enter moving position as absoulte value. The vailable range is -8,388,608 to 8,388,607.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 autpmc_SetDrvSpd(PORTNUM, Node01, FPMC_X_AXIS, 1); //Select speed 1   to   4
 Flag = autpmc_ABSMove(PORTNUM, Node01, FPMC_X_AXIS, 10000);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

5.3 autpmc_INCMove

This function, autpmc_INCMove, is for moving to relative position by a specified distance from current position at PMC-2HSP/2HSN. (proportion to pulse scale)

(1) Syntax

```
int autpmc_INCMove(
int PortNum,
char nNodeId,
char axis,
long lPos
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- lPos

  Enter moving position as relative value. The vailable range is -8,388,608 to 8,388,607.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 autpmc_SetDrvSpd(PORTNUM, Node01, FPMC_X_AXIS, 1); //Select speed 1   to   4
 Flag = autpmc_INCMove(PORTNUM, Node01, FPMC_X_AXIS, 10000);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

5.4 autpmc_ContMove

This function, autpmc_ContMove, is for outputing drive pulse continuously until stop signal input by broadcast at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_ContMove(
int PortNum,
char nNodeId,
char axis,
BOOL bDirection
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE is returned when ID is out of the range . Enter broadcast (0x80) and data transfers to every connected PMC-2HSP/2HSN and PC by broadcast function.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- bDirection

  Enter FPMC_PLUS(1) to move ‘+’. Enter FPMC_MINUS(0) to move ‘-’.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 autpmc_SetDrvSpd(PORTNUM, Node01, FPMC_X_Y_AXIS, 1); //Select speed 1   to   4
 Flag = autpmc_ContMove(PORTNUM, Broadcast, FPMC_X_Y_AXIS, 0);

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

5.5 autpmc_LIDMove

This function, autpmc_LIDMove, is for running 2 axes linear interpolation from current coordinate to end coordinate at PMC-2HSP .

(1) Syntax

```
PMC_FUNC autpmc_LIDMove(
int PortNum,
BYTE nNodeId,
BOOL bFLS,
long lXEndPos,
long lYEndPos
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- bFLS

  Enter FPMC_ON(1) to use constant linear velocity. Enter FPMC_OFF(0) not to use constant linear velocity.

- lXEndPos

  Enter X-axis end coordinate. The vailable range is -8,388,608 to 8,388,607.

- lYEndPos

  Enter Y-axis end coordinate. The vailable range is -8,388,608 to 8,388,607.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);

 autpmc_SetDrvSpd(PORTNUM, Node01, FPMC_X_Y_AXIS, 1); //Select speed 1   to   4

 Flag = autpmc_LIDMove(PORTNUM, Node01, 0, 1000, 1000);

 if(Flag!=FPMC_OK)
 {
```

```
                printf("error!\n");
                return;
 }



 autpmc_Close(PORTNUM);
}
```

5.6 autpmc_CIDMove

This function, autpmc_CIDMove, is for running circle interpolation drive to clockwise(CW) direction at PMC-2HSP.

(1) Syntax

```
PMC_FUNC autpmc_CIDMove(
int PortNum,
BYTE nNodeId,
BOOL bFLS,
long lRadius,
long lMDP
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- bFLS

  Enter FPMC_ON(1) to use constant linear velocity. Enter FPMC_OFF(0) not to use constant linear velocity.

- lRadius

  Enter radius. The vailable range is 0 to 8,388,607.

- lMDP

  Enter manual deceleration point. The vailable range is 0 to 268,435,455.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;
 long ManualDecelPoint; //ManualDecelPoint
 int Range; // Speed Multiplier
 long Acceleration; // Acceleration rate
 long Deceleration; // Deceleration rate
 long StVelocity; // Start speed
 long DrVelocity; //Drive speed
 long CtXaxis; //X axis Center position
 long CtYaxis; //Y axis Center position
 long EndXaxis; //X axis End position
 long EndYaxis; //Y axis End position
 BOOL CW=1; //Direction
 BOOL bDecValue; //Fiexd Line Speed;

 Range = 10;
 Acceleration = 400;
 Deceleration = 400;
 StVelocity = 50;
 DrVelocity = 10;
 CtXaxis = 1000;
 CtYaxis = 1000;
 EndXaxis = 1000;
 EndYaxis = 1000;
 bDecValue = 1; //Enable;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 ManualDecelPoint = CalculateManualDecelPoint(Range, Acceleration, Deceleration,
StVelocity, DrVelocity, CtXaxis, CtYaxis, EndXaxis, EndYaxis, CW, bDecValue); //Calculate
manual deceleration point

 printf("Manual deceleration point : %ld\n", ManualDecelPoint);

 Flag = autpmc_CIDMove(PORTNUM, Node01, 0, 10000, ManualDecelPoint);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

5.7 autpmc_FIDMove

This function, autpmc_FIDMove, is for running circular interpolation drive to clockwise(CW) direction at PMC-2HSP.

(1) Syntax

```
PMC_FUNC autpmc_FIDMove(
int PortNum,
BYTE nNodeId,
BOOL bFLS,
long lXCenPos,
long lYCenPos,
long lXEndPos,
long lYEndPos,
long lMDP
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- bFLS

  Enter FPMC_ON(1) to use constant linear velocity. Enter FPMC_OFF(0) not to use constant linear velocity.

- lXCenPos

  Enter X-axis center coordinate. The vailable range is -8,388,608 to 8,388,607.

- lYCenPos

  Enter Y-axis center coordinate. The vailable range is -8,388,608 to 8,388,607.

- lXEndPos

  Enter X-axis end coordinate. The vailable range is -8,388,608 to 8,388,607.

- lYEndPos

  Enter X-axis end coordinate. The vailable range is -8,388,608 to 8,388,607.

- lMDP

  Enter manual deceleration point. The vailable range is 0 to 268,435,455.

(3) Return value

Item	Definition	Return value	Description
Nor mal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3
```

```
void main()
{
 int Flag=0;
 long ManualDecelPoint; //ManualDecelPoint
 int Range; // Speed Multiplier
 long Acceleration; // Acceleration rate
 long Deceleration; // Deceleration rate
 long StVelocity; // Start speed
 long DrVelocity; //Drive speed
 long CtXaxis; //X axis Center position
 long CtYaxis; //Y axis Center position
 long EndXaxis; //X axis End position
 long EndYaxis; //Y axis End position
 BOOL CW=1; //Direction
 BOOL bDecValue; //Fiexd Line Speed;

 Range = 10;
 Acceleration = 400;
 Deceleration = 400;
 StVelocity = 50;
 DrVelocity = 10;
 CtXaxis = 1000;
 CtYaxis = 1000;
 EndXaxis = 1000;
 EndYaxis = 1000;
 bDecValue = 1; //Enable;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 ManualDecelPoint = CalculateManualDecelPoint(Range, Acceleration, Deceleration,
StVelocity, DrVelocity, CtXaxis, CtYaxis, EndXaxis, EndYaxis, CW, bDecValue); //Calculate
manual deceleration point

 printf("manual deceleration point : %ld\n", ManualDecelPoint);

 Flag = autpmc_FIDMove(PORTNUM, Node01, CW, CtXaxis, CtYaxis, EndXaxis, EndYaxis,
ManualDecelPoint);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

5.8 autpmc_RIDMove

This function, autpmc_RIDMove, is for running circular interpolation drive to counter clockwise(CCW) direction at PMC-2HSP.

(1) Syntax

```
PMC_FUNC autpmc_RIDMove(
int PortNum,
BYTE nNodeId,
BOOL bFLS,
long lXCenPos,
long lYCenPos,
long lXEndPos,
long lYEndPos,
long lMDP
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- bFLS

  Enter FPMC_ON(1) to use constant linear velocity. Enter FPMC_OFF(0) not to useconstant linear velocity.

- lXCenPos

  Enter X-axis center coordinate. The vailable range is -8,388,608 to 8,388,607.

- lYCenPos

  Enter Y-axis center coordinate. The vailable range is -8,388,608 to 8,388,607.

- lXEndPos

  Enter X-axis end coordinate. The vailable range is -8,388,608 to 8,388,607.

- lYEndPos

  Enter Y-axis end coordinate. The vailable range is -8,388,608 to 8,388,607.

- lMDP

  Enter manual deceleration point. The vailable range is 0 to 268,435,455.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3
```

```
void main()
{
 int Flag=0;
 long ManualDecelPoint; //ManualDecelPoint
 int Range; // Speed Multiplier
 long Acceleration; // Acceleration rate
 long Deceleration; // Deceleration rate
 long StVelocity; // Start speed
 long DrVelocity; //Drive speed
 long CtXaxis; //X axis Center position
 long CtYaxis; //Y axis Center position
 long EndXaxis; //X axis End position
 long EndYaxis; //Y axis End position
 BOOL CCW = 0; //Direction
 BOOL bDecValue; //Fiexd Line Speed;

 Range = 10;
 Acceleration = 1000;
 Deceleration = 1000;
 StVelocity = 500;
 DrVelocity = 1000;
 CtXaxis = 1000;
 CtYaxis = 1000;
 EndXaxis = 3000;
 EndYaxis = 3000;
 bDecValue = 1; //Enable;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);

 ManualDecelPoint = CalculateManualDecelPoint(Range, Acceleration, Deceleration,
StVelocity, DrVelocity, CtXaxis, CtYaxis, EndXaxis, EndYaxis, CCW, bDecValue); //Calculate
manual deceleration point

 printf("manual deceleration point : %ld\n", ManualDecelPoint);

 Flag = autpmc_RIDMove(PORTNUM, Node01, bDecValue, CtXaxis, CtYaxis, EndXaxis,
EndYaxis, ManualDecelPoint);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

6 Program Control

6.1 autpmc_PgmRun

This function, autpmc_PgmRun, is for running program mode by broadcast at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_PgmRun(
int PortNum,
char nNodeId,
char axis,
int iStepNo
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE is returned when ID is out of the range. Enter broadcast (0x80) and data transfers to every connected PMC-2HSP/2HSN and PC by broadcast function.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- iStepNo

  Enter program start address. The vailable range is 0 to 199.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 autpmc_PgmABS (PORTNUM, Node01, FPMC_X_Y_AXIS, 0, 10000, 1, 0, 0, 0); //Drive program absolute position

 Flag = autpmc_PgmRun(PORTNUM, Broadcast, FPMC_X_Y_AXIS, 0); //Run program mode (broadcast)

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

6.2 autpmc_PgmStepRun

This function, autpmc_PgmStepRun, is for running one step at program mode of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_PgmStepRun(
int PortNum,
char nNodeId,
char axis,
int iStepNo
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE is returned when ID is out of the range. Enter broadcast (0x80) and data transfers to every connected PMC-2HSP/2HSN and PC by broadcast function.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- iStepNo

  Enter program address to run one step. The vailable range is 0 to 199.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 autpmc_PgmABS (PORTNUM, Node01, FPMC_X_AXIS, 0, 10000, 1, 0, 0, 0); //Drive
program absolute position

 autpmc_PgmINC (PORTNUM, Node01, FPMC_X_AXIS, 1, 1000, 1, 0, 0, 0); //Drive
program relative position

 Flag = autpmc_PgmStepRun(PORTNUM, Node01, FPMC_X_AXIS, 0); // Run one step
from start address

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

6.3 autpmc_PgmPause

This function, autpmc_PgmPause, is for pausing program mode by broadcast at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_PgmPause(
int PortNum,
char nNodeId,
char axis
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16.FPMC_INVALID_NODE is returned when ID is out of the range. Enter broadcast (0x80) and data transfers to every connected PMC-2HSP/2HSN and PC by broadcast function.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 autpmc_PgmABS (PORTNUM, Node01, FPMC_X_Y_AXIS, 0, 10000, 1, 0, 0, 0); //Drive
program absolute position

 autpmc_PgmRun(PORTNUM, Node01, FPMC_X_Y_AXIS, 0); //Run program mode
 Flag = autpmc_PgmPause(PORTNUM, Node01, FPMC_X_Y_AXIS); //Pause program
mode

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

6.4 autpmc_PgmReRun

This function, autpmc_PgmReRun, is for rerunning program mode from the paused step by broadcast at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_PgmReRun(
int PortNum,
char nNodeId,
char axis
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16.FPMC_INVALID_NODE is returned when ID is out of the range. Enter broadcast (0x80) and data transfers to every connected PMC-2HSP/2HSN and PC by broadcast function.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 autpmc_PgmABS (PORTNUM, Node01, FPMC_X_Y_AXIS, 0, 10000, 1, 0, 0, 0); //Drive
program absolute position
```

```
 autpmc_PgmINC (PORTNUM, Node01, FPMC_X_Y_AXIS, 0, 5000, 1, 0, 0, 0); //Drive
program relative position

 autpmc_PgmRun(PORTNUM, Node01, FPMC_X_Y_AXIS, 0); //Run program mode

 autpmc_PgmPause(PORTNUM, Node01, FPMC_X_Y_AXIS); //Pause program mode

 Flag = autpmc_PgmReRun (PORTNUM, Node01, FPMC_X_Y_AXIS); //Rerun program

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

6.5 autpmc_PgmStop

This function, autpmc_PgmStop, is for forcibly stopping program mode by broadcast function at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_PgmStop(
int PortNum,
char nNodeId,
char axis
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE is returned when ID is out of the range. Enter broadcast (0x80) and data transfers to every connected PMC-2HSP/2HSN and PC by broadcast function.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 autpmc_PgmABS (PORTNUM, Node01, FPMC_X_Y_AXIS, 0, 10000, 1, 0, 0, 0); //Drive
program absolute position

 autpmc_PgmRun(PORTNUM, Node01, FPMC_X_Y_AXIS, 0); //Run program mode
 Flag = autpmc_PgmStop (PORTNUM, Node01, FPMC_X_Y_AXIS); //Stop program

 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

6.6 autpmc_DelPgmData

This function, autpmc_DelPgmData, is for deleting the set step data of program mode at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_DelPgmData(
int PortNum,
char nNodeId,
char axis,
int nStepNo
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nStepNo

  Enter program step number. The vailable range is 0 to 199.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 Flag = autpmc_DelPgmData (PORTNUM,Node01, FPMC_X_Y_AXIS, 0)
 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

6.7 autpmc_DelPgmDataAll

This function, autpmc_DelPgmDataAll, is for deleting all steps data of program mode at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_DelPgmDataAll(
int PortNum,
char nNodeId,
char axis
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 Flag = autpmc_DelPgmDataAll (PORTNUM, Node01, FPMC_X_Y_AXIS);

 if(Flag!=FPMC_OK)
 {
```

```
                printf("error!\n");
                return;
 }



 autpmc_Close(PORTNUM);
}
```

6.8 autpmc_PgmABS

This function, autpmc_PgmABS, is for moving to absolute position by a specified distance from home in program mode at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_PgmABS(
int PortNum,
char nNodeId,
char axis,
int nStepNo,
long lPos,
int nSpeed,
int nTimer,
BOOL bEndP,
BOOL bBoth
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nStepNo

  Enter program step number. The vailable range is 0 to 199.

- lPos

  Absolute position coordinate (-8,388,608 to 8,388,607)

- nSpeed

  Speed index (1 to 4)

- nTimer

  Post-timer index (1 to 3)

- bEndP

  Drive end pulse (0: Disable, 1: Enable)

- bBoth

  Drive X, Y-axis simultaneously(0: Disable, 1: Enable)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_PgmABS (PORTNUM, Node01, FPMC_X_AXIS, 0, 10000, 1, 0, 0, 0);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

6.9 autpmc_PgmINC

This function, autpmc_PgmINC, is for moving to relative position by a specified distance from current position in program mode of PMC-2HSP/2HSN.

(1) Syntax

int autpmc_PgmINC(
int PortNum,
char nNodeId,
char axis,
int nStepNo,
long lPos,
int nSpeed,
int nTimer,
BOOL bEndP,
BOOL bBoth
);

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nStepNo

  Enter program step number. The vailable range is 0 to 199.

- lPos

  Absolute position coordinate(-8,388,608 to 8,388,607)

- nSpeed

  Speed index(1 to 4)

- nTimer

  Post-timer index(1 to 3)

- bEndP

  Drive end pulse(0: Disable, 1: Enable)

- bBoth

  Drive X, Y-axis simultaneously (0: Disable, 1: Enable)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_PgmINC (PORTNUM, Node01, FPMC_X_AXIS, 0, 10000, 1, 0, 0, 0);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

6.10 autpmc_PgmHOM

This function, autpmc_PgmHOM, is for running home search according to the set order of home search mode in program mode of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_PgmHOM(
int PortNum,
char nNodeId,
char axis,
int nStepNo,
BOOL bEndP,
BOOL bBoth
) ;
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nStepNo

  Enter program step number. The vailable range is 0 to 199.

- bEndP

  Drive end pulse (0: Disable, 1: Enable)

- bBoth

  Drive X, Y-axis simultaneously (0: Disable, 1: Enable)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
```

```
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_PgmHOM (PORTNUM, Node01, FPMC_X_Y_AXIS, 0, 1, 1);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

6.11 autpmc_PgmLID

This function, autpmc_PgmLID, is for running 2 axes linear interpolation from current coordinate to end coordinate in program mode at PMC-2HSP.

(1) Syntax

```
int autpmc_PgmLID(
int PortNum,
char nNodeId,
int nStepNo,
long lXEndPos,
long lYEndPos,
BOOL bFLS,
int nSpeed,
int nTimer,
BOOL bEndP
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- nStepNo

  Enter program step number. The vailable range is 0 to 199. 2 steps are assigned.

- lXEndPos

  X-axis end coordinate(-8,388,608 to 8,388,607)

- lYEndPos

  Y-axis end coordinate(-8,388,608 to 8,388,607)

- bFLS

  Constant linear velocity (0: Disable, 1: Enable)

- nSpeed

  Speed index(1 to 4)

- nTimer

  Post-timer index(1 to 3)

- bEndP

  Drive end pulse (0: Disable, 1: Enable)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3
```

```
void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_PgmLID (PORTNUM, Node01, 0, 1000, 1000, 0, 1, 0, 0);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

6.12 autpmc_PgmCID

This function, autpmc_PgmCID, is for running circle interpolation drive to clockwise (CW) direction of X, Y-axis in program mode at PMC-2HSP.

(1) Syntax

```
int autpmc_PgmCID(
int PortNum,
char nNodeId,
int nStepNo,
long lRadius,
BOOL bFLS,
int nSpeed,
int nTimer,
BOOL bEndP
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- nStepNo

  Enter program step number. The vailable range is 0 to 199. 2 steps are assigned.

- lRadius

  Radius coordinate 0 to 8,388,607

- bFLS

  Constant linear velocity (0: Disable, 1: Enable)

- nSpeed

  Speed index (1 to 4)

- nTimer

  Post-timer index (1 to 3)

- bEndP

  Drive end pulse (0: Disable, 1: Enable)

(3) Return value

Item	Definition	Return value	Description
Nor mal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_PgmCID (PORTNUM, Node01, 0, 10000, 1, 1, 1, 1);

 if(Flag!=FPMC_OK)
 {
          printf("error!\n");
          return;
 }



 autpmc_Close(PORTNUM);
}
```

6.13 autpmc_PgmFID

This function, autpmc_PgmFID, is for running circular interpolationdrive to X, Y-axis clockwise (CW) direction in program mode at PMC-2HSP.

(1) Syntax

```
int autpmc_PgmFID(
int PortNum,
char nNodeId,
int nStepNo,
long XCenPos,
long XEndPos,
long YCenPos,
long YEndPos,
BOOL bFLS,
int nSpeed,
int nTimer,
BOOL bEndP
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- nStepNo

  Enter program step number. The vailable range is 0 to 199. 2 steps are assigned.

- XCenPos

  X-axis center coordinate -8,388,608 to 8,388,607

- XEndPos

  X-axis end coordinate -8,388,608 to 8,388,607

- YCenPos

  Y-axis center coordinate -8,388,608 to 8,388,607

- YEndPos

  Y-axis end coordinate -8,388,608 to 8,388,607

- bFLS

  Constant linear velocity (0: Disable, 1: Enable)

- nSpeed

  Speed index (1 to 4)

- nTimer

  Post-timer index (1 to 3)

- bEndP

  Driver end pulse (0: Disable, 1: Enable)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_PgmFID (PORTNUM, Node01, 0, 1000, 1000, 1000, 1000, 0, 1, 0, 0);

 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

6.14 autpmc_PgmRID

This function, autpmc_PgmRID, is for running circular interpolationdrive to X, Y-axis counter clockwise (CCW) direction in program mode at PMC-2HSP.

(1) Syntax

```
int autpmc_PgmRID(
int PortNum,
char nNodeId,
int nStepNo,
long XCenPos,
long XEndPos,
long YCenPos,
long YEndPos,
BOOL bFLS,
int nSpeed,
int nTimer,
BOOL bEndP
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- nStepNo

  Enter program step number. The vailable range is 0 to 199. 2 steps are assigned.

- XCenPos

  X-axis center coordinate -8,388,608 to 8,388,607

- XEndPos

  X-axis end coordinate -8,388,608 to 8,388,607

- YCenPos

  Y-axis center coordinate -8,388,608 to 8,388,607

- YEndPos

  Y-axis end coordinate -8,388,608 to 8,388,607

- bFLS

  Constant linear velocity (0: Disable, 1: Enable)

- nSpeed

  Speed index (1 to 4)

- nTimer

  Post-timer index (1 to 3)

- bEndP

  Driver end pulse (0: Disable, 1: Enable)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_PgmRID (PORTNUM, Node01, 0, 1000, 1000, 1000, 1000, 0, 1, 0, 0);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

6.15 autpmc_PgmICJ

This function, autpmc_PgmICJ, is for jumping to set step when the selected input port in program mode is active status at PMC-2HSP/2HSN. This function is for running the next step when input port is deactive status.

(1) Syntax

```
int autpmc_PgmICJ(
int PortNum,
char nNodeId,
char axis,
int nStepNo,
int nJumpStep,
int nInputPtNo
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nStepNo

  Enter program step number. The vailable range is 0 to 199.

- nJumpStep

  Step number to jump (0 to 199)

- nInputPtNo

  Input port number(0 to 14)

(3) Return value

Item	Definition	Return value	Description
Nor mal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3
```

```
void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_PgmICJ (PORTNUM, Node01, FPMC_X_AXIS, 0, 10, 0);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

6.16 autpmc_PgmIRD

This function, autpmc_PgmIRD, is for moving next step when the selected input port in program mode is active status at PMC-2HSP/2HSN. This function is for waiting current step until active status of input.

(1) Syntax

```
int autpmc_PgmIRD(
int PortNum,
char nNodeId,
char axis,
int nStepNo,
int nInputPtNo
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nStepNo

  Enter program step number. The vailable range is 0 to 199.

- nInputPtNo

  input port number(0 to 14)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;
 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_PgmIRD (PORTNUM, Node01, FPMC_X_AXIS, 0, 10);

 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

6.17 autpmc_PgmOPC

This function, autpmc_PgmOPC, is for turnning ON/OFF the selected output port in program mode at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_PgmOPC(
int PortNum,
char nNodeId,
char axis,
int nStepNo,
int nOutPtNo,
BOOL bON
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nStepNo

  Enter program step number. The vailable range is 0 to 199.

- nOutPtNo

  Output port number(0 to 3)

- bON

  OFF(0) to ON(1)

(3) Return value

Item	Definition	Return value	Description
Nor mal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
```

```
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_PgmOPC (PORTNUM, Node01, FPMC_X_Y_AXIS, 0, 3, 1);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

6.18 autpmc_PgmOPT

This function, autpmc_PgmOPT, is for turning ON the selected output port in program mode during the set ON time at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_PgmOPT(
int PortNum,
char nNodeId,
char axis,
int nStepNo,
int iOnTim,
int nOutPtNo,
BOOL bNextStep
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nStepNo

  Enter program step number. The vailable range is 0 to 199.

- iOnTim

  ON time for output port: 0 to 65,535ms

- nOutPtNo

  Output port number(0 to 3)

- bNextStep

  ON(1) : Moves to next step regardless of output operation.

  OFF(0) : Turns ON the selected output port during the set ON time and moves to next step after the set time.

(3) Return value

Item	Definition	Return value	Description
Nor mal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);



 Flag = autpmc_PgmOPT (PORTNUM, Node01, FPMC_X_Y_AXIS, 0, 100, 1, 1);

 if(Flag!=FPMC_OK)
 {
		printf("error!\n");
		return;
 }



 autpmc_Close(PORTNUM);
}
```

6.19 autpmc_PgmJMP

This function, autpmc_PgmJMP, is for jumping to the set step in program mode at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_PgmJMP(
int PortNum,
char nNodeId,
char axis,
int nStepNo,
int nJumpStep
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nStepNo

  Enter program step number. The vailable range is 0 to 199.

- nJumpStep

  Step number to jump(0 to 199)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_PgmJMP (PORTNUM, Node01, FPMC_X_Y_AXIS, 0, 199);

 if(Flag!=FPMC_OK)
 {
          printf("error!\n");
          return;
 }



 autpmc_Close(PORTNUM);
}
```

6.20 autpmc_PgmREP

This function, autpmc_PgmREP, is for repeatedly running at the set times from the next step to meet autpmc_PgmRPE function(end repetitions) in program mode of PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_PgmREP(
int PortNum,
char nNodeId,
char axis,
int nStepNo,
int nRepCnt
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nStepNo

  Enter program step number. The vailable range is 0 to 199.

- nRepCnt

  The number of repetitions (1 to 255)

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_PgmREP(PORTNUM, Node01, FPMC_X_AXIS, 0, 10); //Start repetitions

 autpmc_PgmRPE(PORTNUM, Node01, FPMC_X_AXIS, 3); // End repetitions

 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

6.21 autpmc_PgmRPE

This function, autpmc_PgmREP, is for endding autpmc_PgmREP(start repetitions) function in program mode at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_PgmRPE(
int PortNum,
char nNodeId,
char axis,
int nStepNo
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nStepNo

  Enter program step number. The vailable range is 0 to 199.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);

autpmc_PgmREP(PORTNUM, Node01, FPMC_X_AXIS, 0, 10); //Start repetitions

Flag = autpmc_PgmRPE(PORTNUM, Node01, FPMC_X_AXIS, 3); // End repetitions
```

```
 if(Flag!=FPMC_OK)
 {
         printf("error!\n");
         return;
 }



 autpmc_Close(PORTNUM);
}
```

6.22 autpmc_PgmEND

This function, autpmc_PgmEND, is for endding program in program mode at PMC-2HSP/2HSN. Enter this function at the end of program.

(1) Syntax

```
int autpmc_PgmEND(
int PortNum,
char nNodeId,
char axis,
int nStepNo
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nStepNo

  Enter program step number. The vailable range is 0 to 199.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 Flag = autpmc_PgmEND(PORTNUM, Node01, FPMC_X_Y_AXIS, 0);
 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

6.23 autpmc_PgmTIM

This function, autpmc_PgmTIM, is for executing wait command during the set time in program mode at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_PgmTIM(
int PortNum,
char nNodeId,
char axis,
int nStepNo,
int nOnTim
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nStepNo

  Enter program step number. The vailable range is 0 to 199.

- nOnTim

  Enter wait time. The vailable range is 0 to 65,535ms.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);
 Flag = autpmc_PgmTIM (PORTNUM, Node01, FPMC_X_Y_AXIS, 0, 100);

 if(Flag!=FPMC_OK)
 {
            printf("error!\n");
            return;
 }



 autpmc_Close(PORTNUM);
}
```

6.24 autpmc_PgmNOP

This function, autpmc_PgmNOP, is for none in program mode at PMC-2HSP/2HSN.

(1) Syntax

```
int autpmc_PgmNOP(
int PortNum,
char nNodeId,
char axis,
int nStepNo
);
```

(2) Parameter

- PortNum

  Enter serial port to execute the command.

- nNodeId

  Select the node ID. The range of node ID is 1 to 16. FPMC_INVALID_NODE(3) is returned when the node ID is out of the range.

- axis

  Select the control axis (X-axis, Y-axis). FPMC_INVALID_AXIS(4) is returned when entering the invalid axis.

Item	Definition	Description	Constant value
PMC_AXIS	FPMC_X_AXIS	X-axis	0
	FPMC_Y_AXIS	Y-axis	1
	FPMC_X_Y_AXIS	X, Y-axis	2

- nStepNo

  Enter program step number. The vailable range is 0 to 199.

(3) Return value

Item	Definition	Return value	Description
Normal	FPMC_OK	0	The command is normally executed.
Input error	FPMC_INVALID_NODE	3	Invalid node ID is entered.
	FPMC_INVALID_AXIS	4	Invalid axis is entered.
	FPMC_INVALID_DATA	5	Invalid data is entered.

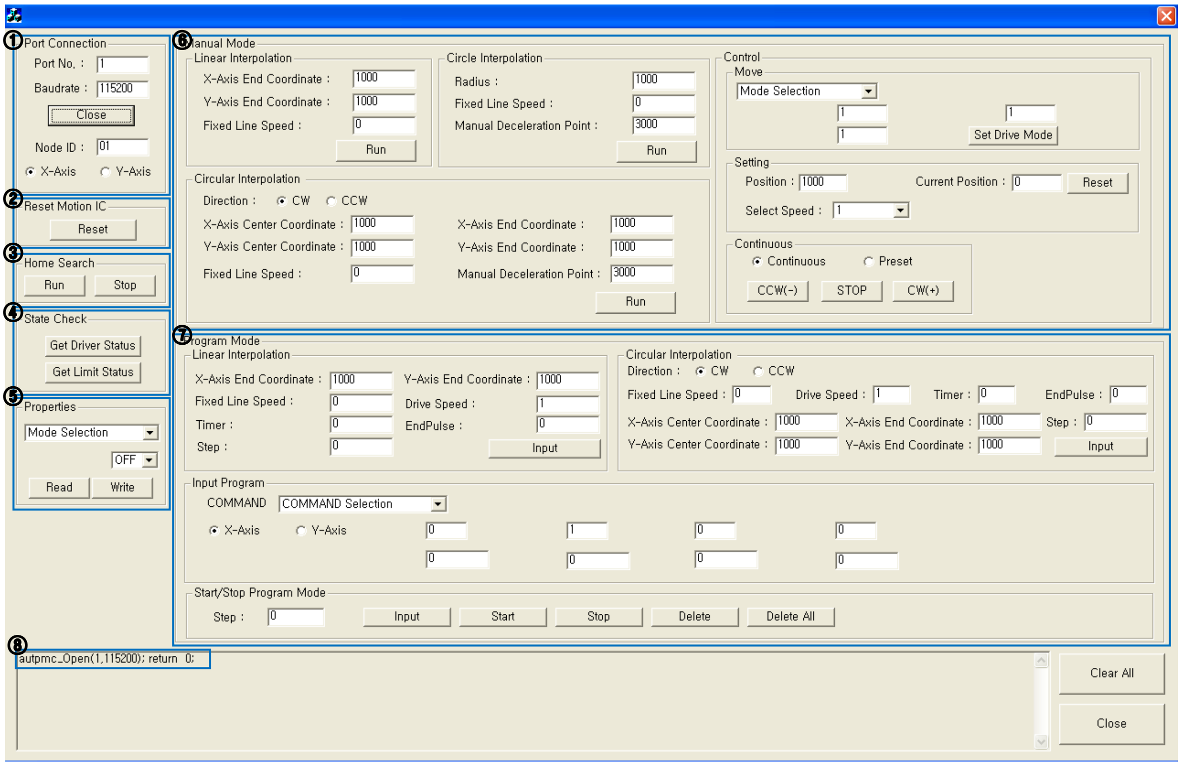
(4) Example

```
#include <stdio.h>
#include <windows.h>
#include "Library.h"

#define PORTNUM 3

void main()
{
 int Flag=0;

 autpmc_Open(PORTNUM, FPMC_BAUD_115200);


 Flag = autpmc_PgmNOP(PORTNUM, Node01, FPMC_X_Y_AXIS, 190);
 if(Flag!=FPMC_OK)
 {
             printf("error!\n");
             return;
 }



 autpmc_Close(PORTNUM);
}
```

7 Example Of MFC Program For Using Library

(1) Example of MFC program

This is example of MFC program by using library function. You can check the sources and it helps to understand necessary operations to use.



Port Connection
Port No. : 1
Baudrate : 115200
Node ID : 01
● X-Axis ○ Y-Axis

Manual Mode
Linear Interpolation
X-Axis End Coordinate : 1000
Y-Axis End Coordinate : 1000
Fixed Line Speed : 0

Circle Interpolation
Radius : 1000
Fixed Line Speed : 0
Manual Deceleration Point : 3000

Control
Move
Mode Selection
1 1
1

Circular Interpolation
Direction : ● CW ○ CCW
X-Axis Center Coordinate : 1000
Y-Axis Center Coordinate : 1000
Fixed Line Speed : 0
X-Axis End Coordinate : 1000
Y-Axis End Coordinate : 1000
Manual Deceleration Point : 3000

Setting
Position : 1000
Current Position : 0
Select Speed : 1

Continuous
● Continuous ○ Preset

Properties
Mode Selection
OFF

Program Mode
Linear Interpolation
X-Axis End Coordinate : 1000
Y-Axis End Coordinate : 1000
Fixed Line Speed : 0
Drive Speed : 1
Timer : 0
EndPulse : 0
Step : 0

Circular Interpolation
Direction : ● CW ○ CCW
Fixed Line Speed : 0
Drive Speed : 1
Timer : 0
EndPulse : 0
X-Axis Center Coordinate : 1000
X-Axis End Coordinate : 1000
Step : 0
Y-Axis Center Coordinate : 1000
Y-Axis End Coordinate : 1000

Input Program
COMMAND COMMAND Selection
● X-Axis ○ Y-Axis 0 1 0 0
0 0 0 0

Start/Stop Program Mode
Step : 0

```
autpmc_Open(1,115200); return 0;
```

(2) Descriptions

No.	Item	Description
①	Port Connection	Calls the port connecton library function and connects/disconnects communication. .
②	Reset Motion IC	Resets the connected PMC motion IC.
③	Home Search	Calls home search library function and runs/stops home search.
④	State Check	Checks the connected PMC motion driver stauts or error. (It is available to check running state or error of home search mode, jog mode, program mode of each axis)
⑤	Properties	Reads/Writes the set parameter value of PMC motion driver.
⑥	Manual Mode	This mode executes one drive sending packet by communication.
⑦	Program Mode	This mode is for executing the set continuous drive on EEPROM at the disconnected environment.
⑧	Log	Check the library syntacx and detailed properties about the executed functions.

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Dimensions or specifications on this manual are subject to change and some models may be discontinued without notice.