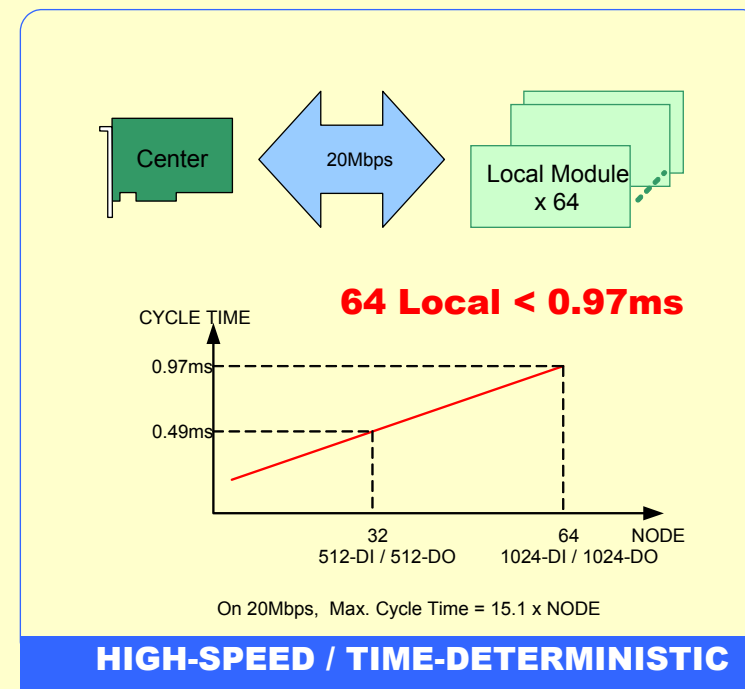
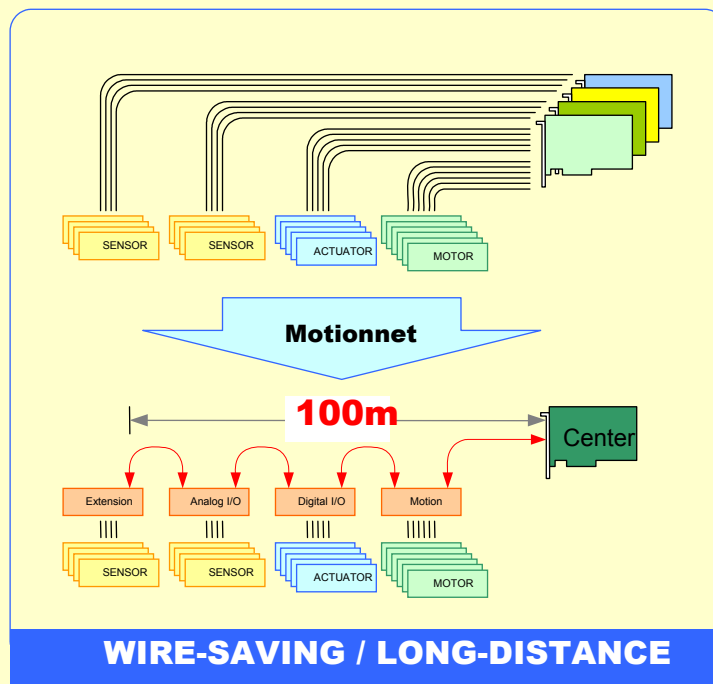


Motionnet

Remote I/O & Remote Motion

Registered trade mark

Ultra-high-speed serial communication system



Development concept

Easy connection with less wiring

- > Then it is serial communication system !
And what do you want to control ?

I/O control

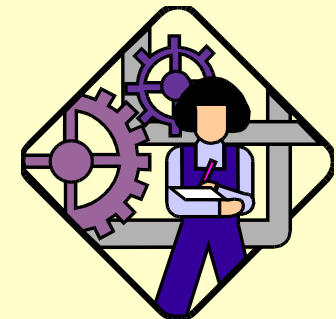
- > Is that all ?

Control many motors, too

- > NPM is good at motion control. Is that all ?

Remote control of peripheral devices

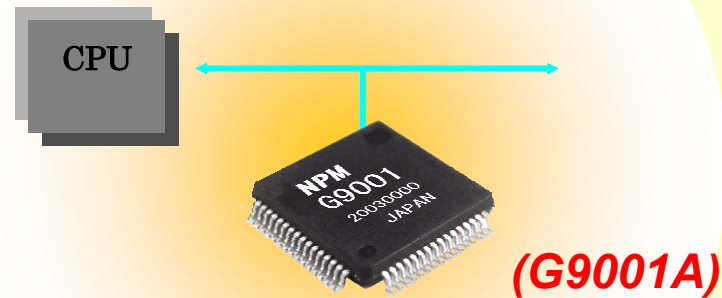
- > OK, let's produce a total system !



Motionnet is a serial communication system produced by your request .

Motionnet device

Center device



Local device

I/O

PCL

CPU Emulation



(G9002)



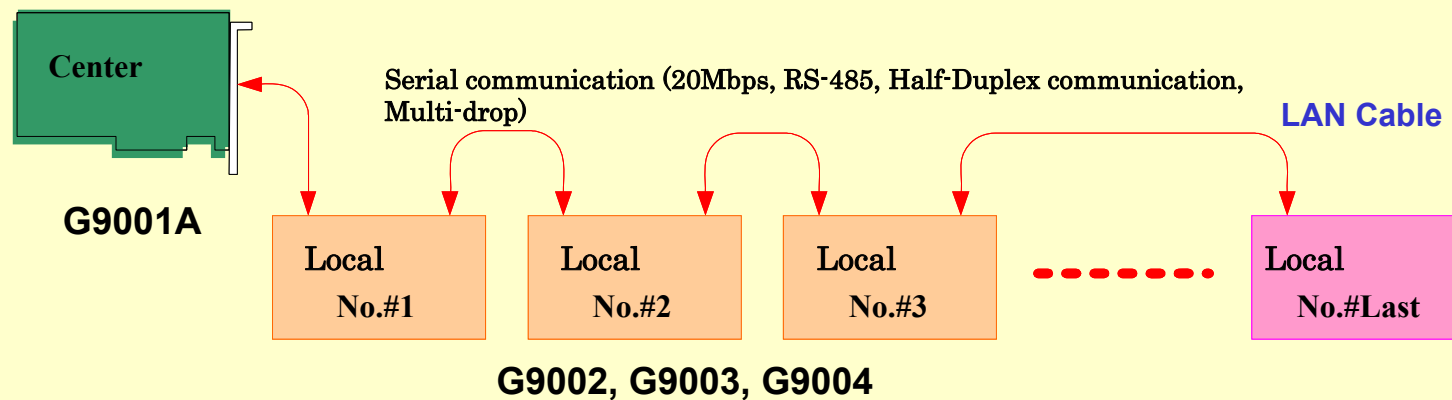
(G9003)



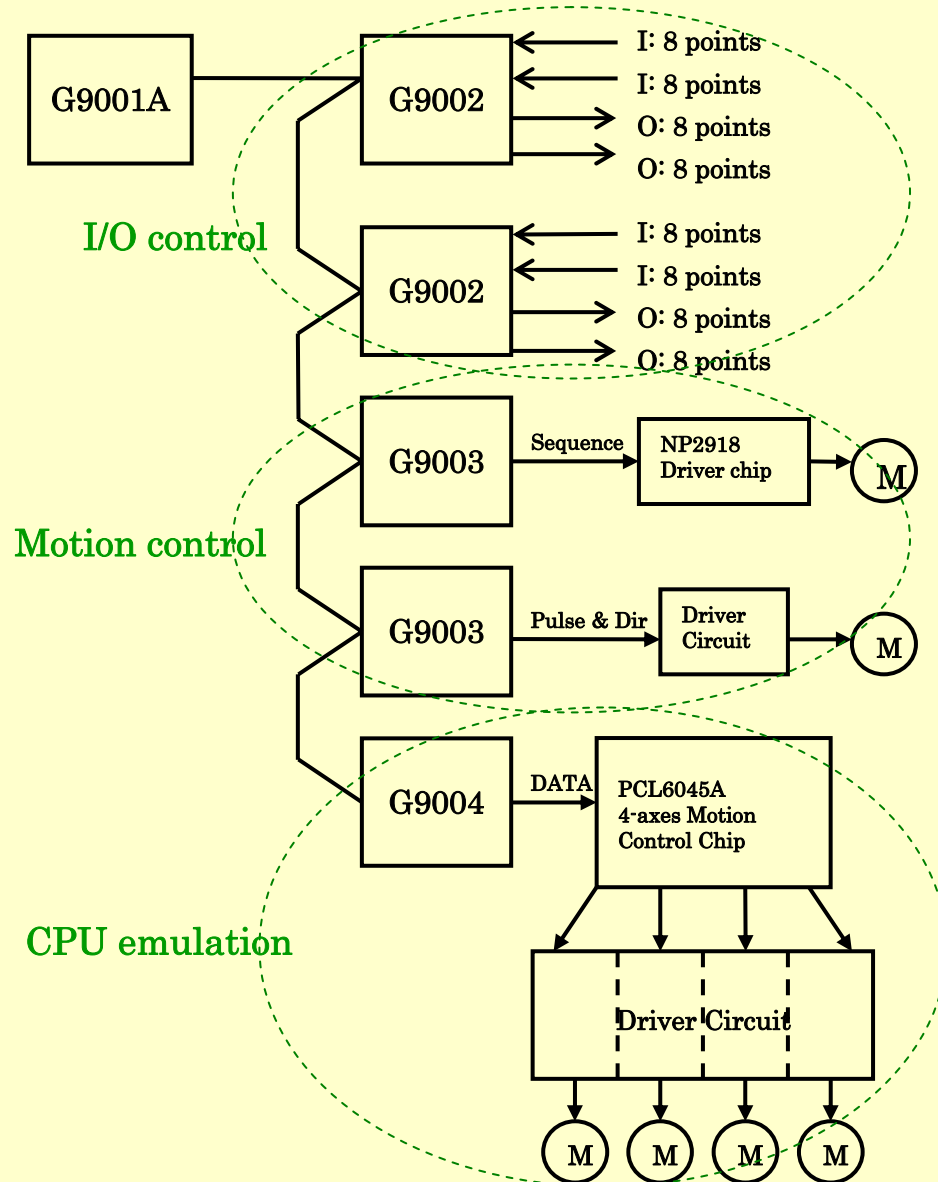
(G9004)

Motionnet system 1

1. This system is made up of center board and local boards.
2. You can connect maximum 64 local devices.



Motionnet system 2



3. Maximum connection

I/O control : Maximum 2,048 points

Motion control : Maximum 64 axes

CPU emulation : Maximum 128 LSI
(In case of PCL6045B)

4. Communication distance

Maximum 100m

(20Mbps / 32 slave modules)

5. Communication cycle

Cyclic time : Maximum 0.97 ms

(20Mbps / 64 local devices / 50m)

6. Reliability

CRC check

Data communication retry three times
at occurring an error

Motionnet serial communication 1

Mode of communication

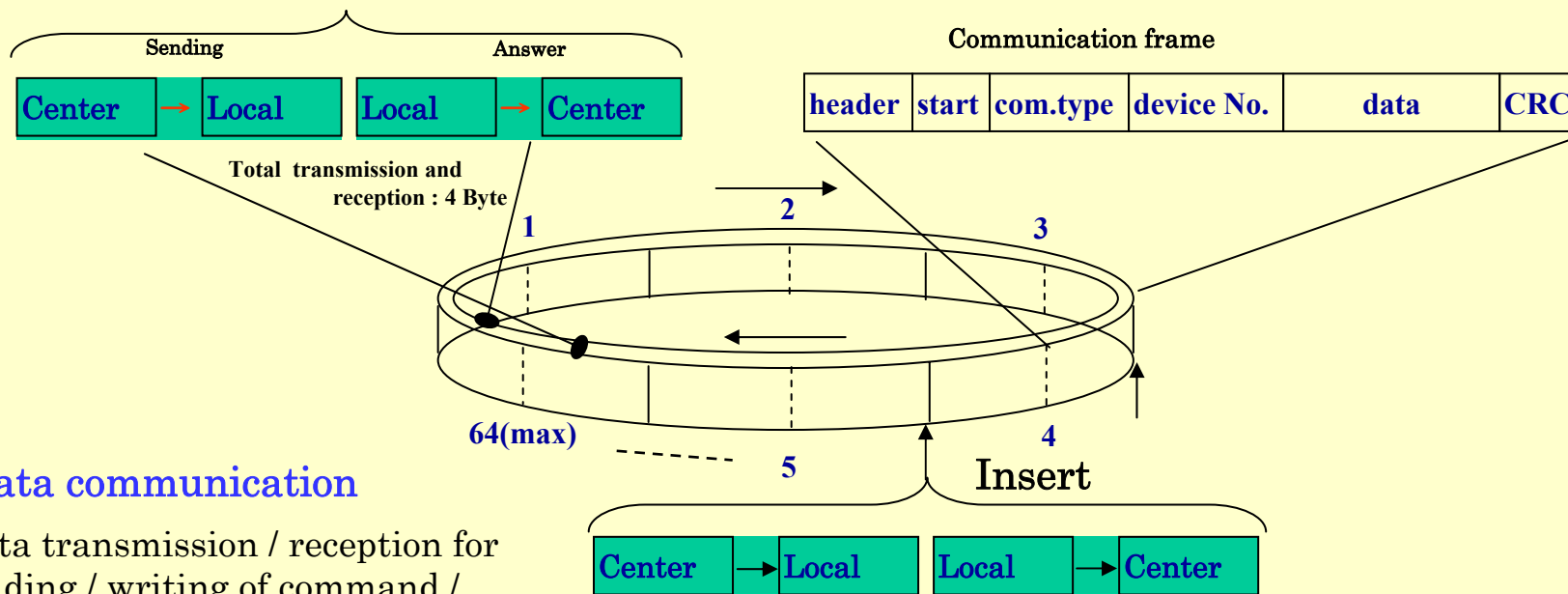
1. System communication

Check status of local device connection

2. Cyclic communication

Control of input and output / Checking status

Communication time : 15.1usec



3. Data communication

Data transmission / reception for reading / writing of command / register

Communication time : $(\text{Byte} \times 0.6 + 3.25) + (\text{Byte} \times 0.6 + 5.65) + 7.4(\mu\text{sec})$
 Transmission time Response time

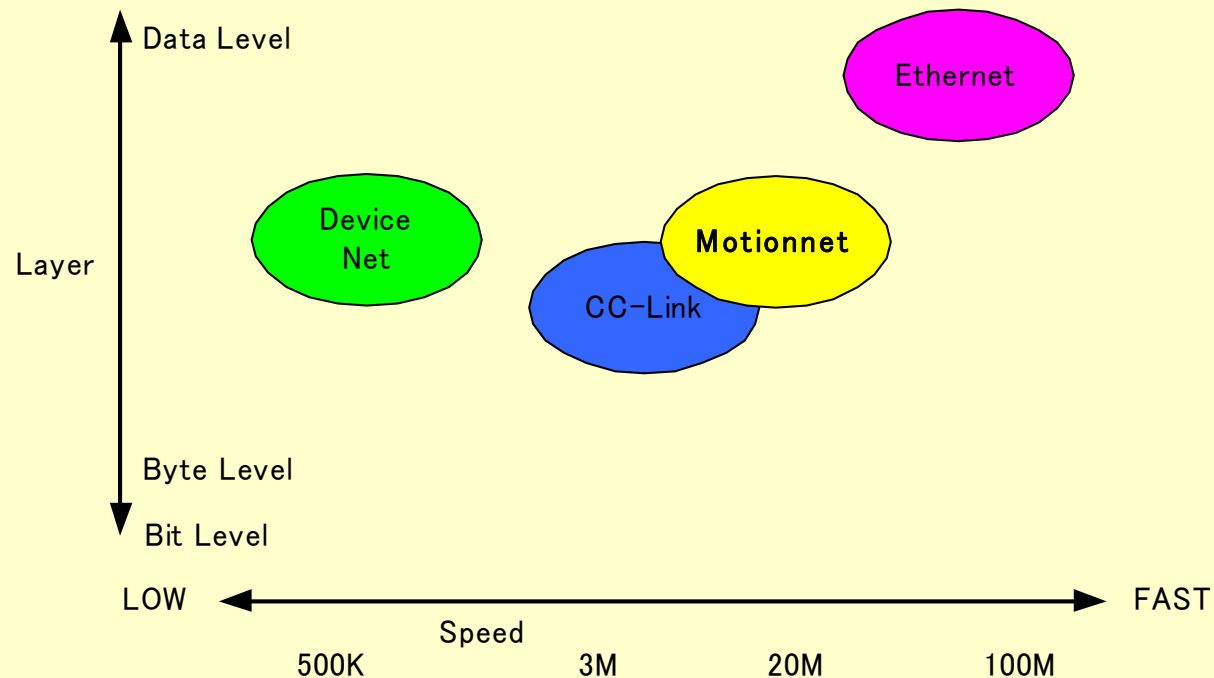
No response data : 5.05 μsec

G9003 Writing command (2Byte) & reading register (6Byte) : 21.1 (μsec)

In the case of sending data of 256 Byte (max) : 169.3 (μsec)

Motionnet Serial Communication 2

High speed transmission from bit level to data level



OPEN FIELD BUS

Optimum for field bus in FA

Communication speed / Various kinds of Control device / The data type in transmission
/ communication distance / The reliability of communication

Device Sales

➡ Easy to construct the serial communication system

Motionnet : Best Open Field Bus

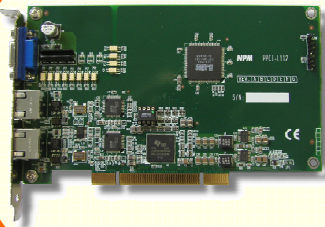
	Motionnet	Device Net	CC - Link
Communication method	Master - Slave	CAN	Master - Slave
Communication speed	20 Mbps	500 Kbps	10 Mbps
Communication distance	100 m (20Mbps)	100 m (500Kbps)	100 m (10Mbps)
No. of supportable slave module	64	64	64
No. of I/O	2048	(Data)	8192
Cable	2 pcs	5 pcs	5 pcs
Customize	easy(device)	Per unit	Per unit

Lineup of Products

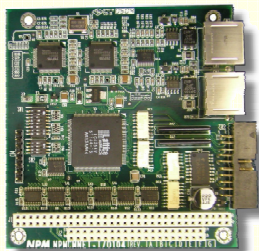
Center board

2 Type

PCI



PC/104



Axis

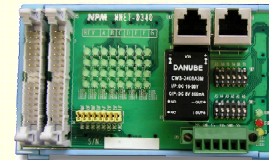
I/O

Local board

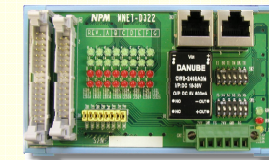
5 Type-



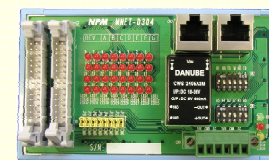
For servo & stepping motor driver



32 IN



16 IN / 16 OUT

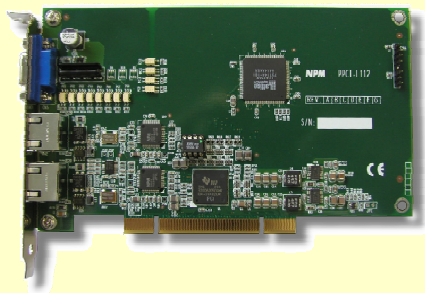


32 OUT

Center board (PCI , PC/104)

Core LSI : Center device G9001A x 1pc

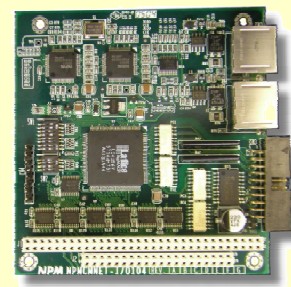
PPCI-L112



- ◆ Features
- PCI bus
- Motionnet 2 Line
- Parallel I/O : IN8 / OUT4

- ◆ Specifications
- Communication speed : 2.5M, 5M, 10M, 20Mbps
- Communication interface : RS-485 with pulse trans 2 Line 64 local /Line
- Communication method : Half duplex
- Communication distance : MAX100m (20Mbps/32 slam module)

NPMCMNET-I/O104

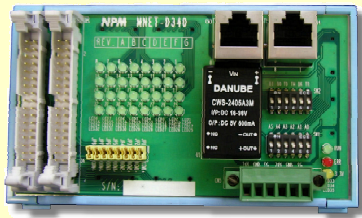


- ◆ Features
- PC/104 bus (16bit)
- Motionnet 2 Line
- Parallel I/O : IN8 / OUT8

Local. input output board

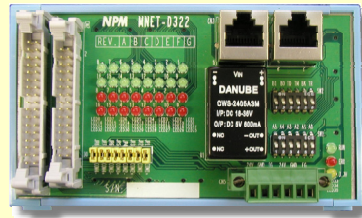
Core LSI : I/O device G9002 x 1pc

MNET-D340



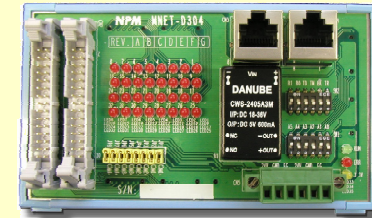
DIO Construction
32 input

MNET-D322



DIO Construction
16 input / 16 output

MNET-D304



DIO Construction
32 output

◆ Features

- Mounts on a DIN rail (L x W x H : 124 x 72 x 53 mm)
- Flat cable connection

◆ Specifications

➤ Input

- 8 points = 1 unit / Common
- Photo-coupler input (Applicable to sink output)
- Input signal voltage DC24V

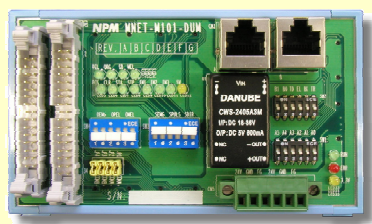
➤ Output

- 8 points = 1 unit / Common
- Open collector output (sink type)
- Maximum Rated voltage DC50V
- Recommended operation voltage: DC12V - 24V
- Maximum output current 80mA/point

Local. 1 axis motion control board

Core LSI : PCL device G9003 x 1pc

MNET-M101-DUM



◆ Features

- Pulse input type, 1 axis servo · stepping motor control
- Mount on a DIN rail (L x W x H : 124 x 72 x 53 mm)
- Flat cable connect

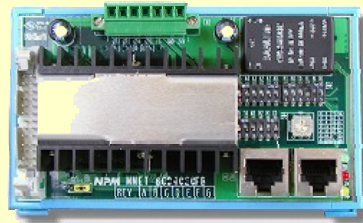
◆ Specifications

- Maximum output frequency : 6.5 Mbps
- Mechanical position counter : 28 bits
- Acceleration/deceleration characteristics : Linear and S-curve (acceleration and deceleration can be specified independently)
- Position range : +-134,217,727 pulse (28bits)
- Zero position return mode : 13 types

Local. Stepping motor driver for single axis

Core LSI : PCL device G9003 x 1pc

MNET-BCD4020FB



This board can be connected directly to a stepping motor

◆ Features

- stepping motor control of 1 axis + driver
- Mount on a DIN rail (L x W x H : 124 x 72 x 53 mm)
- Flat cable connection

◆ Specifications

- Maximum pulse output frequency : 6.5 Mbps
- Mechanical position counter : 28 bits
- Acceleration/deceleration characteristics : Linear and S-curve (acceleration and deceleration can be specified independently)
- Position range : +-134,217,727 pulses
- Zero position return mode : 13 types
- Drive mode : Bipolar, constant current drive
- VR setting : 0.5A - 2A / phase (1 - 5 step)
- Micro steps : 1/2 - 1/256
- Automatic current down
- Motor excitation ON/OFF control

Substantial User Software

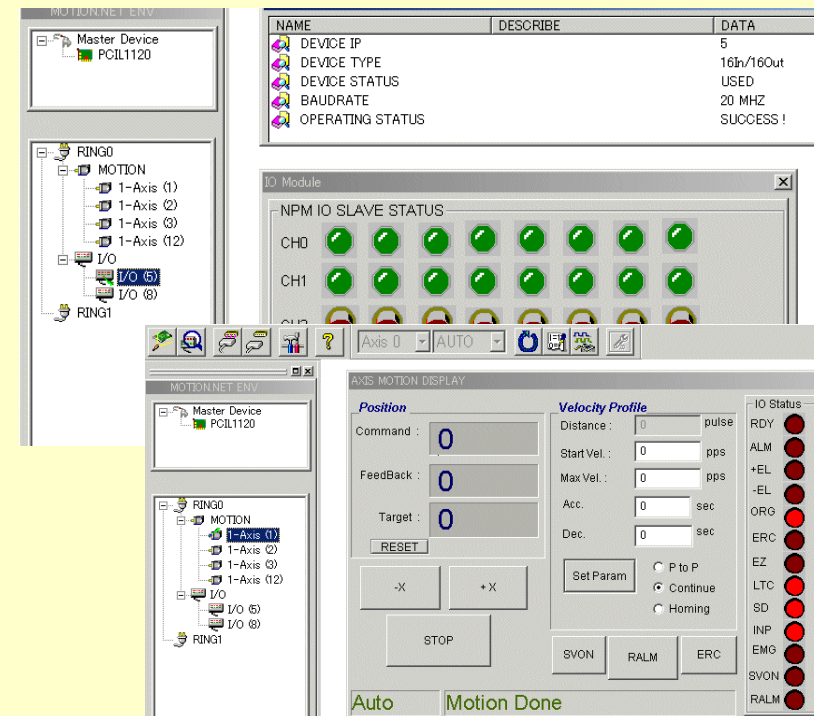
1. Device driver for windows 2000
and XP

2. DLL and sample program

Visual Basic Visual C++

3. EzLink (Utility software)

4. Sample program for MS-DOS
(PC/104 board only)



Applied to each local board