16ch Stepping Motor Controller
PM16C-04
Network Setting

(1827 Ver. 3)

APPLICATION OF ELECTRONIC DEVICES

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Network Setting

1. Preparation for setting.

For safety, prepare Ethernet network environment that is free from external network, personal computer that can be connected to the network, and basic software (terminal software, ftp, ping). For example, the network setting procedure using:

10Base-T cross cable, Personal computer with Windows95, TeraTermPro version2.3, ftp and ping command included in the Windows95

are explained below.

The updated TeraTermPro can be got from the web site below.

The setting procedure of TeraTermPro is omitted here.

ftp://riksun.riken.go.jp/pub/pc/misc/terminal/teraterm/

ftp://ftp.s.u-tokyo.ac.jp/PC/terminal/teraterm/

2. Connection between the network and PM16C

Set the network mode switch on the back panel of the PM16C to "8," and power on it.

Change the IP address and sub net mask data of personal computer as the next sequence.

Select the screen: START → SET → CONTROL PANEL

Select "NETWORK" in the CONTROL PANEL.

Select "TCP/IP" for the using network card in "NETWORK SETTING"

ex) TCP/IP -> ATKK LA-ISA PNP ISA Ethernet etc.

Note "IP address ", "Sub net mask data"

(If "IP address is got automatically" mode selected, this sequence is not needed)

Select "IP address set" mode.

Set IP address / 128.128.128.1, Sub net mask data / 255.255.255.0.

Restart the computer.

Connect the PM16C and the personal computer with the 10Base-T cross cable.

This is the end of connecting between the network and PM16C.

To confirm the exact connection, select the "MS-DOS" screen by the order START → PROGRAM →"MS-DOS program," and start "ping" command in the "MS-DOS" screen.

Microsoft(R) Windows 95

(C)Copyright Microsoft Corp. 1981-1996.

C:¥Windows>ping 128.128.128.128

```
Pinging 128.128.128.128 with 32 bytes of data:

Reply from 128.128.128.128: bytes=32 time=17ms TTL=255
Reply from 128.128.128.128: bytes=32 time=6ms TTL=255
Reply from 128.128.128.128: bytes=32 time=8ms TTL=255
Reply from 128.128.128.128: bytes=32 time=6ms TTL=255

C:¥Windows>
```

If the connection is wrong, the result would be as follows:

```
Microsoft(R) Windows 95
   (C)Copyright Microsoft Corp 1981-1996.

C:¥Windows>ping 128.128.128.128

Pinging 128.128.128.128 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

C:¥Windows>
```

3. Change of Network setting.

After confirming the exact connection, transmit the "Network setting data in PM16C" to the personal computer by using "ftp" command as follows.

```
C:¥Windows>ftp 128.128.128.128
Connected to 128.128.128.128.
220 Board(V 1.11) Setup Service ready ( Dummy IP Address ).
User (128.128.128.128:(none)):
230 User logged in.
ftp> get board.cfg
200 Port set okay.
150 File status okay; about to open data connection.
226 Closing data connection, file transfer successful.
225 bytes received in 0.55 seconds (0.41 Kbytes/sec)
ftp> quit
```

221 Board Setup Service closing control connection.

C:¥Windows>

The network setting data of PM16C has been transmitted to the personal computer as the file named "borad.cfg".
Next correct the data by using editor program.
Here, for example, use "edit" command.
Type as follows.

C:¥Windows>edit board.cfg

Contents of the file is as follows.

NAME:TA-B40 MAC:00-A0-C2-09-32-66 VER:1.17
RSP:speed=38400,data=8,stop=1,parity=NON,flow=RTSCTS
SSW:0 TIM:0
OIP:192.168.1.55 OPT:7777
DIP:2.2.2.2 DPT:514
GIP:192.168.1.1 MSK:255.255.0.0
PRG:NON

In this file, you can change only 4 data: OIP OPT GIP MSK.
You must not change another data.
If you'd changed them by some mistake, you must restore them as above.

The meanings of 4 terms you can change are as follows.

OIP: IP address of PM16C.
OPT: Port No for connection to PM16C.
GIP: Gate way address.
MSK: Net mask

After changing these data to fit your network, write the data（file） to the PM16C as follows.

C:¥Windows>ftp 128.128.128.128
Connected to 128.128.128.128.
220 Board(V 1.11) Setup Service ready（ Dummy IP Address ）.
User (128.128.128.128:(none)):
230 User logged in.
ftp> put board.cfg

200 Port set okay.
150 File status okay; about to open data connection.
226 Closing data connection, file transfer successful.
225 bytes sent in 0.00 seconds（225000.00 Kbytes/sec）
ftp> quit
221 Board Setup Service closing control connection.

C:¥Windows>

4. Restore the Setting for the Personal computer.

Here, the settings for the network are completed.

Power off the PM16C, set the mode sw to "1" on the rear panel, and power on it again.

Restore the network setting of the personal computer as follows.

Select the screen: START → SET → CONTROL PANEL

Select "NETWORK" in the CONTROL PANEL.

Select "TCP/IP" for the using network card in "NETWORK SETTING"

ex）TCP/IP -> ATKK LA-ISA PNP ISA Ethernet etc.

Restore "IP address", "Sub net mask data" as the note that was written at the beginning of this procedure.

（If "IP address is got automatically" mode selected at the beginning, restore to the mode）

After the end of restoring of all data, restart the personal computer.

Connect the network cable, that was connected before, to the computer.

5. Test of connection.

Test the connection between the PM16C and the personal computer.

Start the "TeraTermPro" program on the computer.

Select TCP/IP

Set the IP address（the value of OIP）

Set the TCP port#（the value of OPT）

Then press "OK".

At this point, if the status LED 1 would flicker and status LED 2 would light on the network card（can't be seen from the outside of the PM16C）.

The LED's status above indicate the good connection of network.

Next in the "TeraTermPro",

Select Setup → Terminal

Set Transmit to "CR+LF" in the New-line item.

Check the item "Local echo".

Then press "OK" and the connection would be completed.

Here you can test the PM16C command over the Network.

If you type "SIR<Enter>" then PM16C would be set to remote mode, and by "S1L<Enter>", it would be set to local mode.

Supplementary explanation:

The Network setting example above is for the case in which all the informations about the Network are unknown.

Usually the IP address is known, you can change the Network data by setting dip switch to "9" instead of "8" by using the known IP address.