

# **NEMO10 / NEMO10-SK**

**Version 1.2.3**

**2005-05-31**

## User Guide for the NEMO10/NEMO10-SK

1.2.3

1.3.X

Printed in Korea

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가 .

### Trademark

HelloDevice™ , Inc. .

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Ethernet® XEROX Corporation .

### Notice to Users

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.

가

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# 1:

## 1.1

NEMO10

가

NEMO10 DIL (Dual-In-Line) 가

. NEMO10 RS232

NEMO10

SK, 가 . NEMO10-SK  
가

. 가 NEMO10-  
CD-ROM, 가

NEMO10 TCP/IP  
LAN( )

NEMO10 telnet

. HelloDevice Manager .

NEMO10 /POS, ,  
.

## 1.2

### NEMO10

NEMO10 DIL

### NEMO10-SK

- NEMO10 DIL

- NEMO10                   가

- 110V           230V

- Ethernet CAT5

-                   /

- HelloDevice Manager, Serial/IP™                   가                   CD-ROM

## 1.3 NEMO10

|  |   |
|--|---|
|  | 80C51 8-bit microprocessor                                      |
|  | 32KB SRAM, 64KB EEPROM  |
|  | Built-in UART   |
|  | 1200bps ~ 115.2kbps   |
|  | : None                   RTS/CTS                                |
|  | : Rx, Tx, RTS, CTS, DTR, DSR, GND                               |
|  | 10 Base-T   |
|  | IP  |
|  | ARP, IP/ICMP, TCP, Telnet, DHCP client, PPPoE                   |
|  | ID  |
|  | Telnet                   HelloDevice Manager                    |
|  | 24-   |
|  | LED                   ,                   ,                   , |
|  | 5VDC +/- 10%  |
|  | 60mA @ 5VDC   |
|  | : 0 ~ 55 °C   |
|  | : -40 ~ 66 °C   |
|  | 45 mm L (1.8 in.) * 45 mm W (1.8 in.) * 18.5 mm H (0.7 in.)     |
|  | 1   |

# 1.4

NEMO10

## MAC

LAN

MAC(Media Access Control)

가 .( LAN .)

6 OUI(Organization Unique Identifier) 6

12 . NEMO10 MAC 00-01-95-xx-xx-xx ,

가

IP

" "가 .

(" ").

/

/

,

/

.

,

.

HTML

HTML

|              |   |
|--------------|---|
| <b>ISP</b>   | (Internet Service Provider)                   |
| <b>PC</b>    | (Personal Computer)                           |
| <b>NIC</b>   | (Network Interface Card)                      |
| <b>MAC</b>   | (Media Access Control)                        |
| <b>LAN</b>   | (Local Area Network)                          |
| <b>UTP</b>   | (Unshielded Twisted Pair)                     |
| <b>ADSL</b>  | 가 (Asymmetric Digital Subscriber Line)        |
| <b>ARP</b>   | (Address Resolution Protocol)                 |
| <b>IP</b>    | (Internet Protocol)                           |
| <b>ICMP</b>  | (Internet Control Message Protocol)           |
| <b>UDP</b>   | (User Datagram Protocol)                      |
| <b>TCP</b>   | (Transmission Control Protocol)               |
| <b>DHCP</b>  | (Dynamic Host Configuration Protocol)         |
| <b>SMTP</b>  | (Simple Mail Transfer Protocol)               |
| <b>FTP</b>   | (File Transfer Protocol)                      |
| <b>PPP</b>   | (Point-To-Point Protocol)                     |
| <b>PPPoE</b> | (Point-To-Point Protocol over Ethernet)       |
| <b>HTTP</b>  | (HyperText Transfer Protocol)                 |
| <b>DNS</b>   | (Domain Name Service)                         |
| <b>SNMP</b>  | (Simple Network Management Protocol)          |
| <b>UART</b>  | (Universal Asynchronous Receiver/Transmitter) |
| <b>Bps</b>   | (Universal Asynchronous Receiver/Transmitter) |
| <b>DCE</b>   | (Data Communications Equipment)               |
| <b>DTE</b>   | (Data Terminal Equipment)                     |
| <b>CTS</b>   | 가 (Clear to Send)                             |
| <b>DSR</b>   | (Data Set Ready)                              |
| <b>DTR</b>   | (Data Terminal Ready)                         |
| <b>RTS</b>   | (Request To Send)                             |



## 2:

- NEMO10-SK 가 NEMO10
- 2.1 NEMO10 가
- 2.2 NEMO10 ,
- 2.3 telnet
- 2.4 NEMO10
- DC (NEMO10-SK ) x 1
- (NEMO10-SK ) x 1
- ( NIC) RS232 가 PC x 1
- PC
- CAT5 x 1

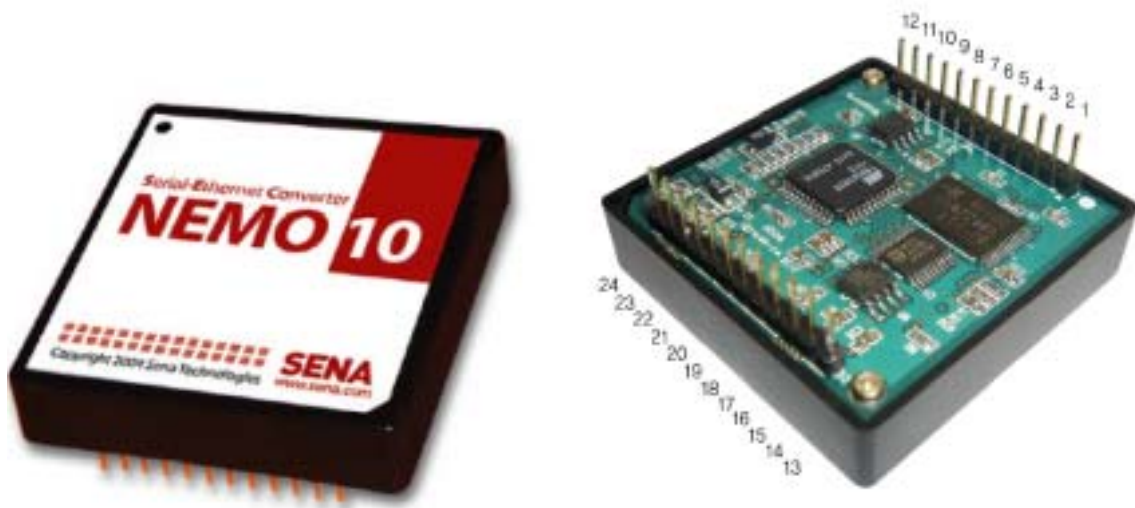
## 2.1

### 2.1.1 NEMO10

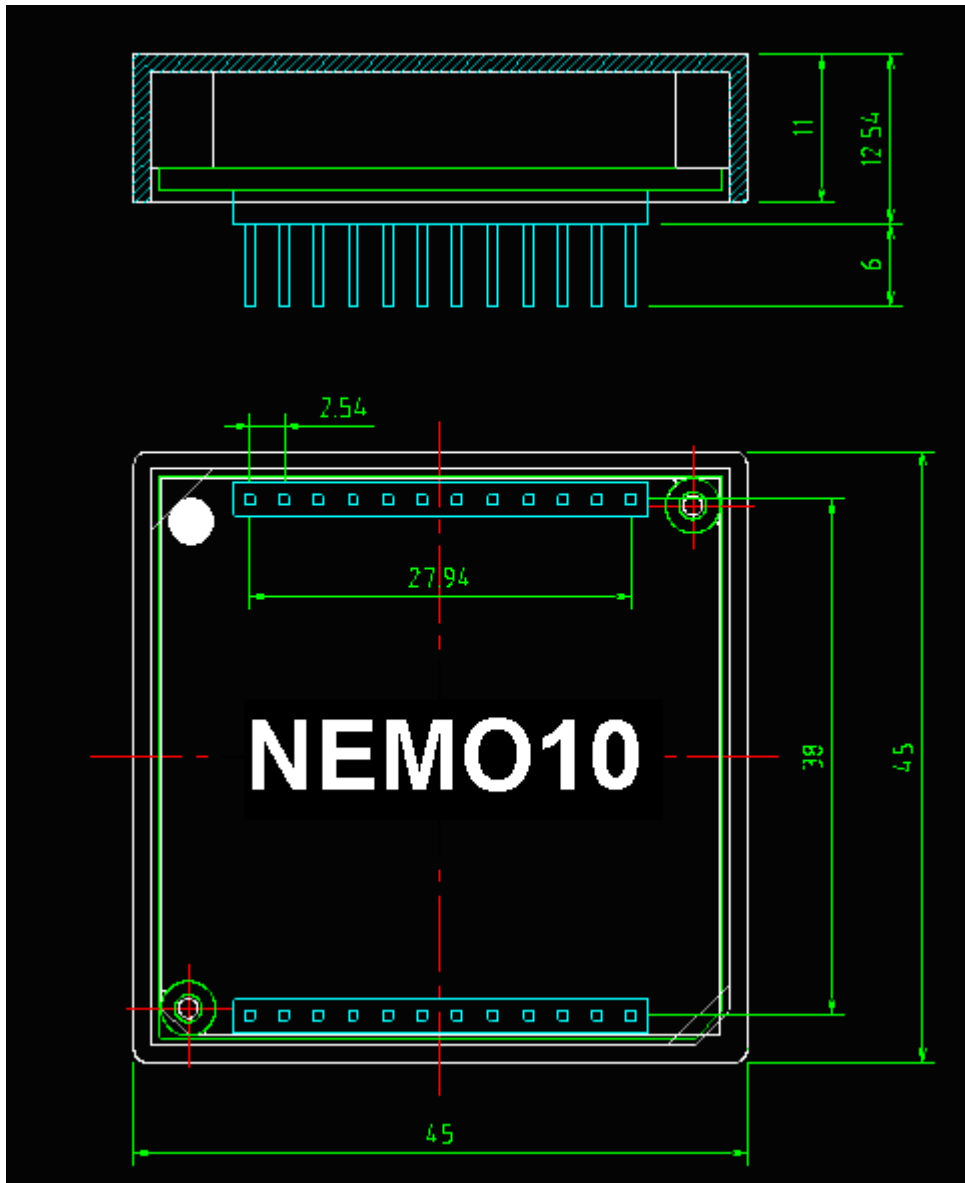
NEMO10 DIL(Dual-In-Line) . NEMO10 , , LED,  
UART RJ45 . 2-1 NEMO10  
, 2-1 NEMO10 .

2-1 NEMO10

|    |   |
|----|---|
|    |   |
| 1  | GND   |
| 2  | Reset(High Active)                                |
| 3  | N.C   |
| 4  | N.C   |
| 5  | LED (Ethernet Link/Collision)                     |
| 6  | Ethernet Tx-                                      |
| 7  | Ethernet Tx+                                      |
| 8  | Ethernet Rx+                                      |
| 9  | Ethernet Rx-                                      |
| 10 | Vcc   |
| 11 | LED (Ready)                                       |
| 12 | LED (Ethernet Act)                                |
| 13 | Vcc   |
| 14 | Console/Data switch<br>(High: Data, Low: Console) |
| 15 | Serial DSR  |
| 16 | Serial CTS  |
| 17 | Serial DTR  |
| 18 | Serial RTS  |
| 19 | Serial Rx   |
| 20 | Serial Tx   |
| 21 | Factory Reset switch (Low Active)                 |
| 22 | GND   |
| 23 | LED (Serial Tx)                                   |
| 24 | LED (Serial Rx)                                   |



(45 mm x 45 mm x 18.5 mm, 24 DIL , 2.54 mm )



2-1. NEMO10

2.1.2 가

NEMO10-SK NEMO10 DIL 가 가  
 . 가 10Base-T RJ45 , LED, ,  
 RS232-TTL , RS232 DB9 , / 가

가

NEMO10

2-2 가

2-3 LED

가 LED 가

10 Base-T Ethernet Rx, Tx, Collision/Link Act

NEMO10

가

2-2 가

2-3 NEMO10 가

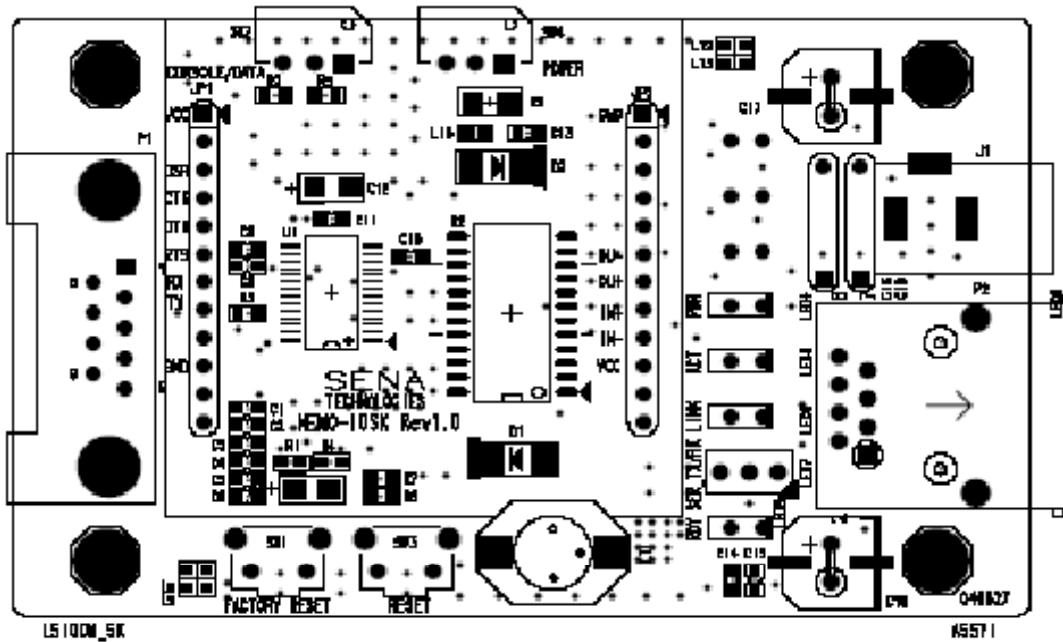
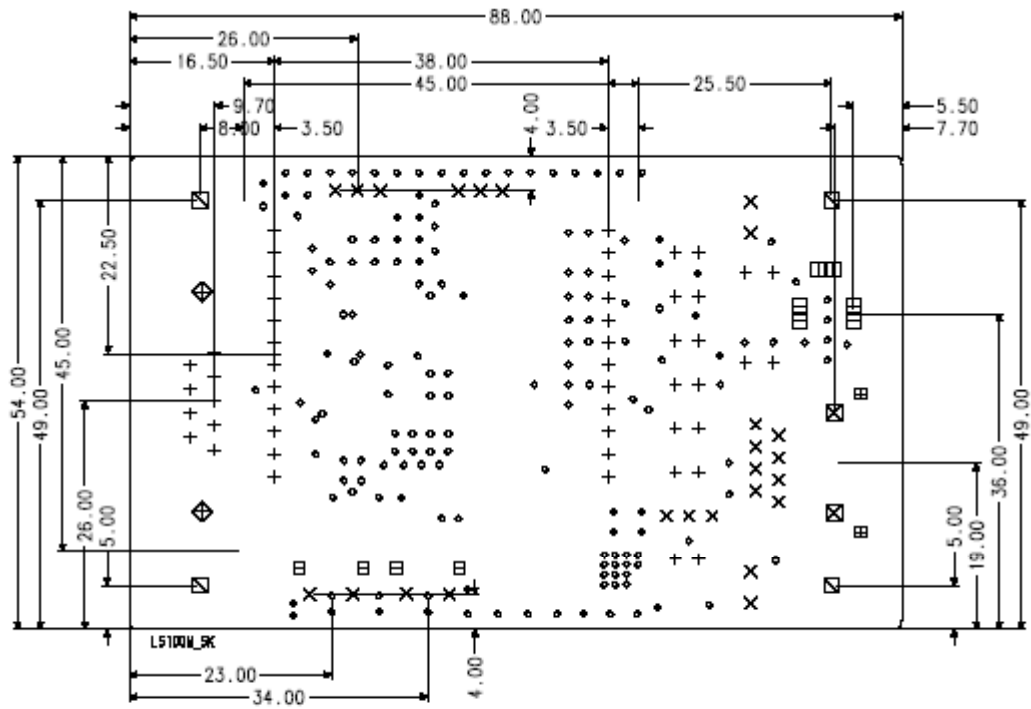
NEMO10-SK

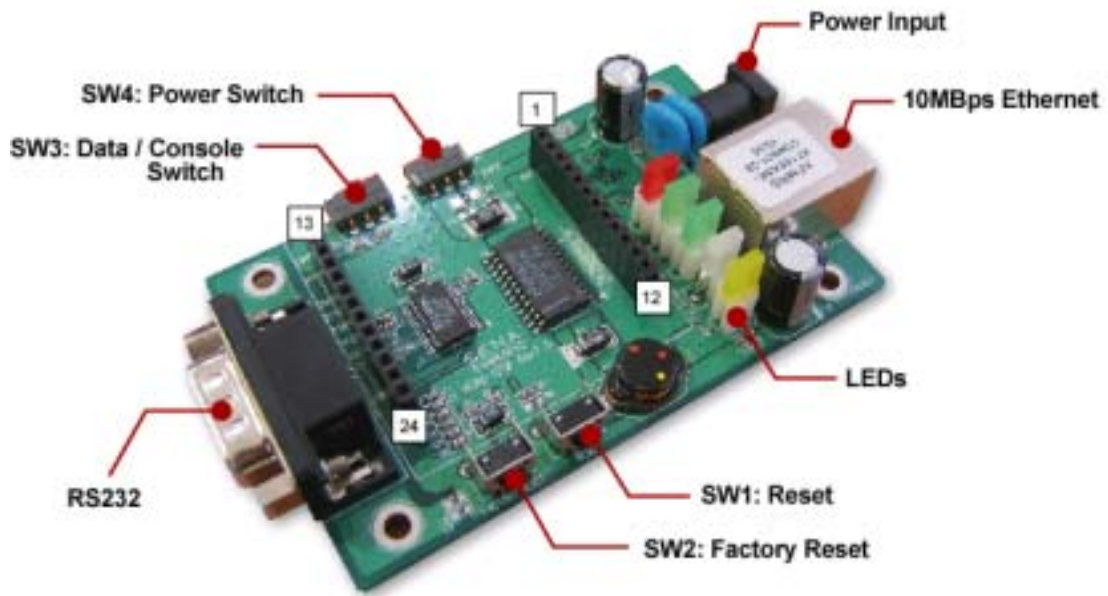
2-2 NEMO10 가

|    |   |
|----|---|
| 1  | GND   |
| 2  | Reset (High Active)                               |
| 3  | LED (Ethernet Tx)                                 |
| 4  | LED (Ethernet Rx)                                 |
| 5  | LED (Ethernet Link/Collision)                     |
| 6  | Ethernet Tx-                                      |
| 7  | Ethernet Tx+                                      |
| 8  | Ethernet Rx+                                      |
| 9  | Ethernet Rx-                                      |
| 10 | Vcc   |
| 11 | LED (Ready)                                       |
| 12 | LED (Ethernet Act)                                |
| 13 | Vcc   |
| 14 | Console/Data switch<br>(High: Data, Low: Console) |
| 15 | Serial DSR  |
| 16 | Serial CTS  |
| 17 | Serial DTR  |
| 18 | Serial RTS  |
| 19 | Serial Rx   |
| 20 | Serial Tx   |
| 21 | Factory Reset switch<br>(Low Active)              |
| 22 | GND   |
| 23 | LED (Serial Tx)                                   |
| 24 | LED (Serial Rx)                                   |

2-3 가 LED

| LED |                        |
|-----|------------------------|
| 1   | Power                  |
| 2   | Ethernet Act           |
| 3   | Ethernet Link          |
| 4   | Serial Rx/Tx (2-color) |
| 5   | Ready                  |





2-3 NEMO10 가 NEMO10-SK

## 2.2

, 가 NEMO10 가

- NEMO10 가

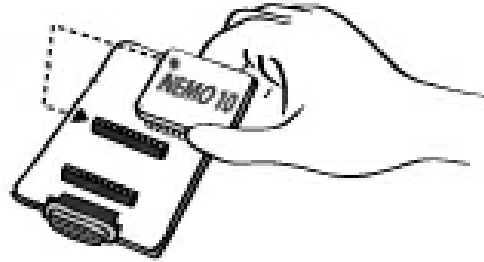
- 가

- 가

- 가

## 2.2.1 NEMO10 가

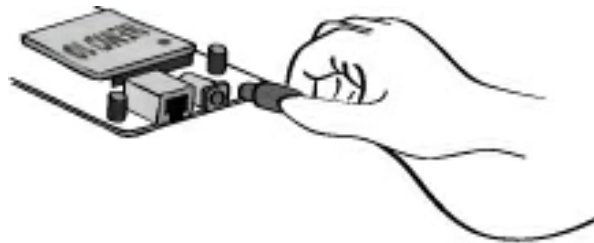
NEMO10 가 2-4



2-4. NEMO10 가

## 2.2.2

DC 가 [ ] LED가



2-5. 가

## 2.2.3

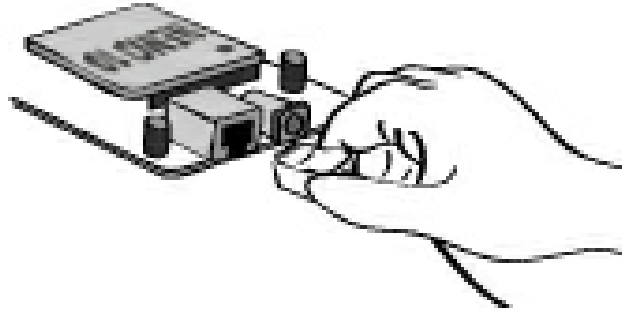
가 10Base-T NEMO10

LED가

- 가 [Link] LED가
- [Collision/Act] LED가

가

NEMO10 가 가



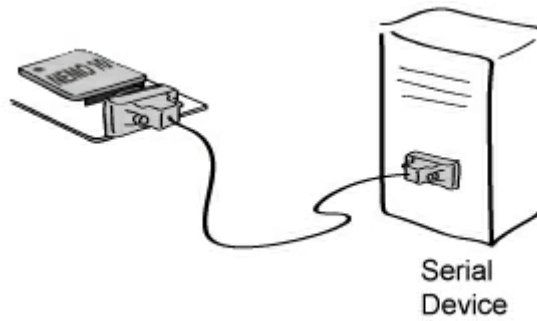
2-6.

가

### 2.2.4

가  
가

NEMO10



2-7. NEMO10



## 2.3.

가 NEMO10

가 가

- :

/ ( ) NEMO10

. NEMO10

/

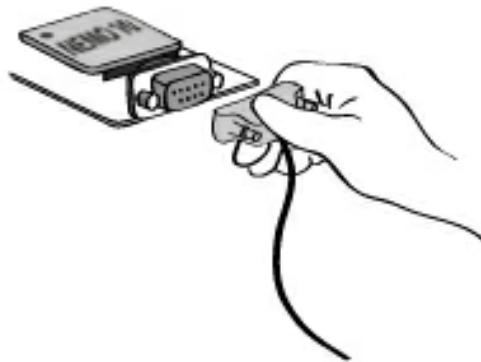
- :

TCP/IP NEMO10 ( 23) telnet

NEMO10

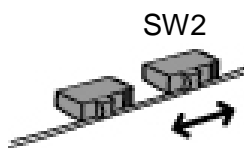
### 2.3.1

- 1) NEMO10 가



2-8. NEMO10 가

- 2)
- 3) NEMO10 가 Data/Console (SW2) Console



2-9. NEMO10 /

4) (HyperTerminal)

**9600 Baud rate, Data bits 8, Parity None, Stop bits 1, Hardware flow control**

5) [ENTER]

6) NEMO10

admin

7) 가 NEMO10 2-10

```
login: admin
password: *****
Type 'help' to get command usages
> help
set group par1 [par2 ...] + <CR>
- group = 'ip','host','serial' or 'admin'
- par1 ... = configuration parameters. Use * to keep a parameter's value
get [group] + <CR>
- group = 'ip','host','serial','admin' or 'status'
- If group is specified, shows settings of the group.
- If group is omitted, shows settings of all groups.
factorydefault [option] + <CR>
- if option is omitted, all parameters are set with factory default values.
- if option='-ip',
  all parameters except IP settings are set with factory default values.
help [group] + <CR>
- If group is omitted, shows this screen.
- If group is specified, shows 'set' command usage of the group.
save + <CR>
- Save changes
exit + <CR>
- Exit without rebooting the device
reboot + <CR>
- Exit and reboot the device
>
```

2-10. NEMO10

'set', 'get' 'save'  
'exit' 'reboot'  
'help'

2.4

### 2.3.2

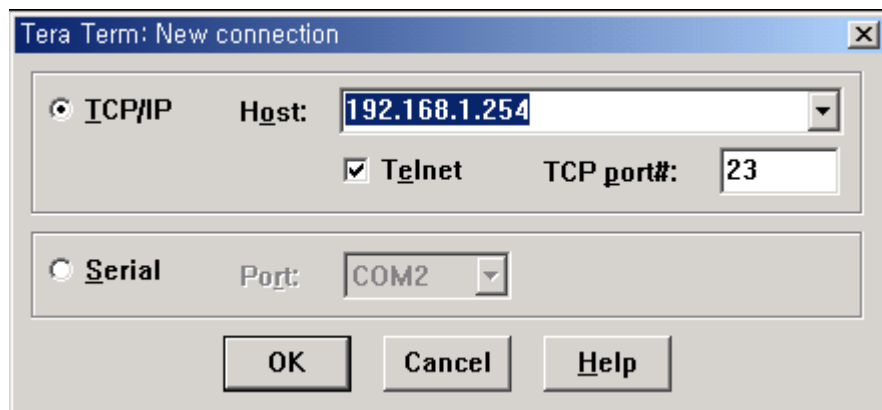
NEMO10 telnet  
NEMO10 가  
NEMO10 IP telnet  
TCP 23

NEMO10

- 1) TeraTerm-Pro telnet  
Target IP NEMO10  
23

telnet 192.168.1.254

telnet



2-11. Telnet

- 2) NEMO10

admin

- 3) NEMO10

- 4)

## 2.4

NEMO10

가

2-4

NEMO10

### 2-4 NEMO10

| set group par1 [par2 ...] +<br><CR> | - group = 'ip', 'host', 'serial' 'admin'<br>- par1 ... = *   | '<br>"OK" + <CR> + <LF><br>If error<br>"ERROR" + <CR> +<br><LF> |
|-------------------------------------|--|---|
| get [group] + <CR>                  | - group = 'ip', 'host', 'serial', 'admin' 'status'<br>-<br>- |   |
| help [group] + <CR>                 | -<br>- .. 'set'  |   |
| factorydefault [option] +<br><CR>   | - , 가<br>- if option='-ip' IP<br>가                           | '<br>"OK" + <CR> + <LF><br>가<br>"ERROR" + <CR> +<br><LF>        |
| save + <CR>                         |  | '<br>"OK" + <CR> + <LF><br>가<br>"ERROR" + <CR> +<br><LF>        |
| exit + <CR>                         | ) (  | '<br>"OK" + <CR> + <LF><br>가<br>"ERROR" + <CR> +<br><LF>        |
| reboot + <CR>                       |  | None  |

## 2.4.1 'set'

```
'set' NEMO10
'set'
```

**set group par1 [par2 ...] + <CR>**

**where,**

**group = 'ip','host','serial' or 'admin'**

**par1 par2 ... = configuration parameters. Use \* to keep a parameter's value**

```
'group' , IP
2-12 set
```

```
> set ip static 192.168.1.100 255.255.255.0 192.168.1.1
OK
>
```

2-12. IP

```
'ip' 가 IP
'static' NEMO10 '192.168.1.100' static IP
IP
**
IP IP
```

```
> set ip static * 255.255.0.0
OK
>
```

2-13.

```
'set' 'help group' 'set'
, IP 'set' , 'help
ip' + <CR> 2-14 IP 'set'
```

```
> help ip
set ip ipmode par1 par2 ...
- ipmode: static=Static IP / dhcp=DHCP / pppoe=PPPoE
- parameters:
if ipmode = static,
    par1 = IP address,
    par2 = subnet mask,
```

```

    par3 = gateway
if ipmode = dhcp,
    no parameters required
if ipmode = pppoe,
    par1 = PPPoE username,
    par2 = PPPoE password
>

```

2-14.

```

:
    'save'   'reboot'
.
2.4.5 ~ 2.4.7

```

## 2.4.2 'get'

```

'get'           NEMO10           .           'get'
.

```

**get [group] + <CR>**

*where,*

- group = 'ip', 'host', 'serial', 'admin' or 'status'**
- If group is specified, shows settings of the group.**
- If group is omitted, shows settings of all groups.**

```

'set'           가           .           , IP
2-15           get

```

```

> get ip
IP_mode: static
IP_address: 192.168.1.100
Subnet_mask: 255.255.255.0
Gateway: 192.168.1.1
>

```

2-15. IP

```

'status'       'set'       가           . 'get status'
.

```

```

> get status
Serial_no.: NEMO10-0207_test

```

```
MAC_address: 00-01-95-77-88-99
F/W_REV.: V1.2.0
Current_IP: 192.168.0.125
>
```

2-16.

, get

2-17

```
> get
--- Status ---
Serial_no.: NEMO10-0207_test
MAC_address: 00-01-95-77-88-99
F/W_REV.: V1.2.0
Current_IP: 192.168.0.125
--- Admin ---
Username: admin
Password: admin
Devicename: NEMO10 Device
--- IP ---
IP_mode: dhcp
--- Host ---
Host_mode: tcps
Local_port: 6001
Inactivity_timeout(sec): 300
--- Serial ---
Baudrate: 9600
Data_bits: 8_bits
Parity: None
Stop_bits: 1_bit
Flow_control: None
DTR_option: Always_high
DSR_option: None
Interchar_timeout(ms): 50
>
```

2-17.

### 2.4.3 'help'

'help'

**help [group] + <CR>**

**where,**

***if group is omitted, overall help screen will be displayed***

***if group is specified, 'set' command usage of specified group will be displayed.***

2-18

2-19 'ip'

```

> help
set group par1 [par2 ...] + <CR>
- group = 'ip','host','serial' or 'admin'
- par1 ... = configuration parameters. Use * to keep a parameter's value
get [group] + <CR>
- group = 'ip','host','serial','admin' or 'status'
- If group is specified, shows settings of the group.
- If group is omitted, shows settings of all groups.
help [group] + <CR>
- If group is omitted, shows this screen.
- If group is specified, shows 'set' command usage of the group.
factorydefault [option] + <CR>
- if option is omitted, all parameters are set with factory default values.
- if option='-ip',
  all parameters except IP settings are set with factory default values.
save + <CR>
- Save changes
exit + <CR>
- Exit without rebooting the device
reboot + <CR>
- Exit and reboot the device

```

2-18.

```

> help ip
set ip ipmode par1 par2 ...
- ipmode: static=Static IP / dhcp=DHCP / pppoe=PPPoE
- parameters:
if ipmode = static,
    par1 = IP address,
    par2 = subnet mask,
    par3 = gateway
if ipmode = dhcp,
    no parameters required
if ipmode = pppoe,
    par1 = PPPoE username,
    par2 = PPPoE password

```

2-19. 'ip'

#### 2.4.4 'factorydefault'

'factorydefault'

'factorydefault'

**factorydefault [option] + <CR>**

**where,**

- if option is omitted, all parameters are set with factory default values.
- if option='-ip', all parameters except IP settings are set with factory default values.



'save' . 'factorydefault'  
'save' 'reboot' .

```
> factorydefault (or factorydefault -ip)
OK
> save
OK
> reboot
```

2-20.

## 2.4.5 'save'

'save' . 'save'

**save + <CR>**

'reboot' NEMO10 .

## 2.4.6 'exit'

'exit' .  
NEMO10 . 'exit'

**exit + <CR>**

## 2.4.7 'reboot'

'reboot' NEMO10 . NEMO10 가  
'reboot' .

**reboot + <CR>**

### 3: IP

NEMO10 IP 가 IP

NEMO10

IP , Static IP, DHCP PPPoE IP

IP DHCP 3-1 IP

3-1 IP

|           |                        |
|-----------|------------------------|
| Static IP | IP address             |
|           | Subnet mask            |
|           | Default gateway        |
| DHCP      | No parameters required |
| PPPoE     | PPPoE username         |
|           | PPPoE password         |

IP 'set'

**set ip ipmode par1 par2 ...**

**where,**

**ipmode: 'static' for Static IP / 'dhcp' for DHCP / 'pppoe' for PPPoE**

**parameters:**

**if ipmode = static,**

**par1 = IP address, par2 = subnet mask, par3 = gateway**

**if ipmode = dhcp,**

**no parameters required**

**if ipmode = pppoe,**

**par1 = PPPoE username, par2 = PPPoE password**

## 3.1 Static IP

### 3.1.1

Static IP NEMO10 IP , IP

IP . IP

IP

가 LAN NEMO10 TCP/IP 가

가 NEMO10

가

ISP .

NEMO10 IP

IP

### 3.1.2 Static IP

NEMO10 IP set

***set ip static ip\_address subnet\_mask default\_gateway + <CR>***

***where,***

***ip\_address = IP address of the NEMO10***

***subnet\_mask = Subnet mask***

***default\_gateway = Default gateway IP address***

3-1 IP 'save'

'reboot'

```
> set ip static 192.168.1.10 255.255.255.0 192.168.1.1
OK
```

### 3-1. Static IP IP

## 3.2 DHCP

### 3.2.1

(DHCP) 가 IP . DHCP 가 IP , 가 IP .

3.1 IP Static IP , IP 가 DHCP IP , , DNS , DHCP IP 가 " (lease)" . IP DHCP DHCP IP 가 NEMO10 IP DHCP , , DNS . NEMO10 DHCP DHCP 가 NEMO10 IP DHCP NEMO10 DHCP IP DHCP 가 IP IP DHCP , NEMO10 IP IP DHCP 가 NEMO10 IP DHCP NEMO10 MAC 가 . MAC=00:01:95:04:0c:a1

### 3.2.2 DHCP

NEMO10 DHCP

3-2

IP

DHCP

```
> set ip dhcp
OK
>
```

3-2. DHCP

### 3.3 PPPoE

#### 3.3.1

PPPoE LAN 가 (Customer Premises Equipment) . (가 (Customer Premises Equipment) .) PPPoE

가 ADSL, PPPoE ADSL .  
NEMO10 PPPoE PPPoE ADSL PPPoE  
가 . NEMO10 PPPoE ADSL  
IP 가 PPPoE NEMO10 PPPoE PPPoE  
IP , , DNS  
가 . NEMO10 가  
가 NEMO10 PPPoE

#### 3.3.2 PPPoE

NEMO10 PPPoE

3-3

ADSL

PPPoE

```
> set ip pppoe pppoeuser pppoepassword
OK
>
```

3-3. PPPoE

#### 4.

NEMO10  
 가 .TCP  
 / 4-1  
**TCP**

4-1. NEMO10 TCP/IP

|              |   |
|--------------|---|
|              |   |
| <b>TCP</b>   | NEMO10 TCP . NEMO10 TCP<br>TCP NEMO10<br>가 . NEMO10 TCP<br>, 가 TCP<br>가 |
| <b>TCP</b>   | NEMO10 TCP 가<br>TCP NEMO10 TCP NEMO10<br>가<br>NEMO10<br>가               |
| <b>TCP /</b> | NEMO10 TCP<br>가 ,<br>NEMO10   |

4-2

4-2

|                          |                            |
|--------------------------|----------------------------|
| <b>TCP Server</b>        | Listening TCP port         |
|                          | Inactivity timeout (sec)   |
| <b>TCP Client</b>        | Destination IP             |
|                          | Destination TCP Port       |
|                          | Cyclic connection Interval |
|                          | Inactivity timeout (sec)   |
| <b>TCP Server/Client</b> | Listening TCP port         |
|                          | Destination IP             |
|                          | Destination TCP Port       |
|                          | Cyclic connection Interval |
|                          | Inactivity timeout (sec)   |

'set'

**set host hostmode par1 par2 ...**

**where,**

**hostmode: tcps=TCP server / tcpc=TCP client / tcpsc=TCP server & client**

**parameters:**

**if hostmode = TCP server (tcps),**

**par1 = listening TCP port,**

**par2 = inactivity timeout (sec)**

**if hostmode = TCP client (tcpc),**

**par1 = destination IP address,**

**par2 = destination TCP port,**

**par3 = cyclic connection interval (min),**

**par4 = inactivity timeout (sec)**

**if hostmode = TCP server & client (tcpsc),**

**par1 = listening TCP\_port,**

**par2 = destination IP address,**

**par3 = destination TCP port,**

**par4 = cyclic connection interval (min),**

**par5 = inactivity timeout (sec)**

**\* set cyclic connection interval to 0 not to use cyclic connection**

**\* set inactivity timeout to 0 for unlimited timeout**

TCP

(State Transition Diagram)

가

NEMO10 TCP

- Listen

" " TCP  
TCP

- Closed

" " 가  
TCP [Listen]  
TCP TCP /

- Sync-Received

*TCP* [Listen]  
 [Sync-Received] . NEMO10 [Established]  
*TCP*

**- Sync-Sent**  
 NEMO10 [Closed] [Sync-Sent] .  
 가 *TCP*

**- Established**  
 " " 가  
 [Established]

**- Data**  
 [Established] 가 . *TCP*  
 [Data] RFC 793 [Transmission Control Protocol]  
 [Established]



## 4.1 TCP

### 4.1.1

NEMO10 TCP TCP [Listen] . NEMO10  
TCP . 가  
PC TCP -  
TCP

1)

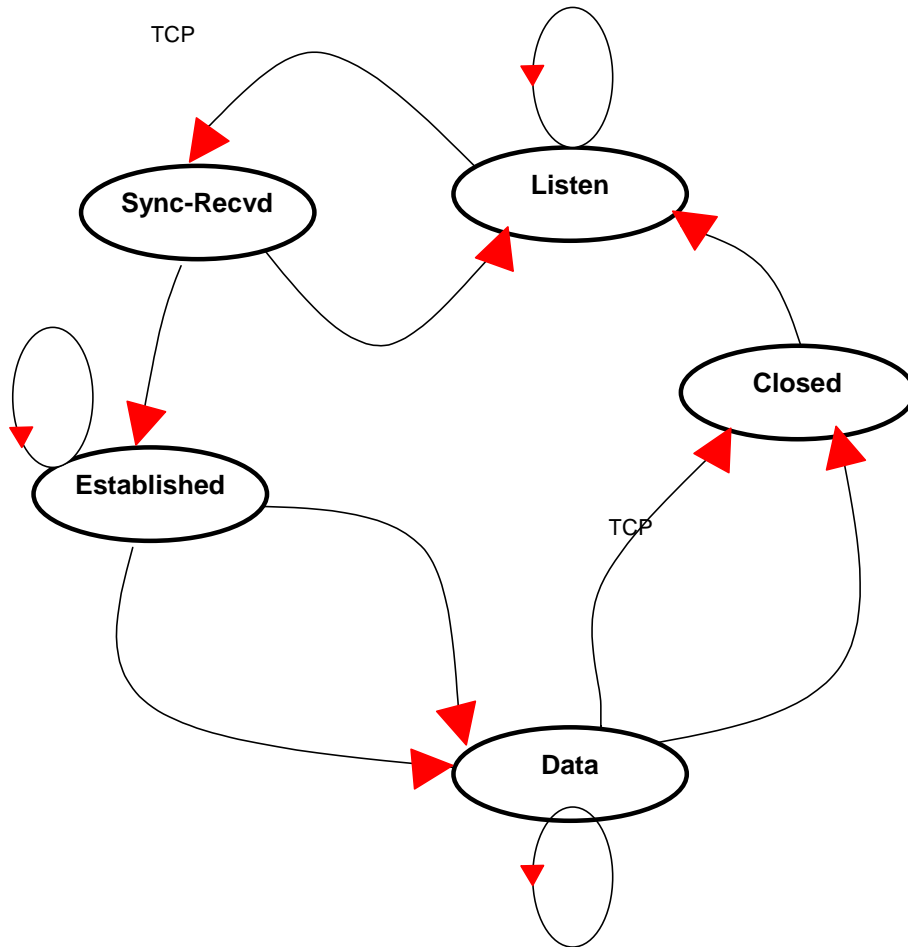
[Listen] --> [Sync-Received] --> [Established] --> [Data] --> [Closed] --> [Listen]

TCP [Listen] . TCP [Sync-  
Received] [Established] ,  
가 . 가 [Data]  
가 [Closed] .  
[Listen] .

2)

NEMO10 가 가 Inter-  
*character timeout*  
가 , IP . NEMO10  
가  
"Inactivity timeout"

4-1 TCP



4-1. TCP

### 4.1.2 TCP

NEMO10 TCP

'set'

***set host tcps listening\_TCP\_port inactivity\_timeout + <CR>***

***where,***

***listening\_TCP\_port: Listening TCP port***

***Inactivity\_timeout: Inactivity timeout in seconds.***

Listening TCP port 가 TCP

TCP

. Listening TCP Port

. NEMO10

. ( D.

.)

TCP 2

Inactivity timeout TCP host NEMO10

TCP Closed Listen . Inactivity timeout

가 가 TCP

Inactivity timeout 0 , TCP

. Inactivity timeout NEMO10 "keep alive" 가

NEMO10 NEMO10

TCP

:

Inter-character timeout

#### 4-2 TCP

```
> set host tcps 6001 300
OK
>
```

#### 4-2. TCP

## 4.2 TCP

### 4.2.1

NEMO10 TCP , TCP [Closed] .  
TCP - PC  
TCP .

1)

[Closed] --> [Sync-Sent] --> [Established] --> [Data] --> [Closed]

TCP [Closed] . 가  
NEMO10 [Sync-Sent]  
, 가  
[Established] , .  
가 . [Data] .  
[Closed] .

2)

가 NEMO10 NEMO10  
. TCP  
가 가 *Inter-character timeout*  
, IP . NEMO10  
가 .  
가  
*"Inactivity timeout"*  
가 .  
TCP TCP .  
*Cyclic Connection* NEMO10 가

가  
가

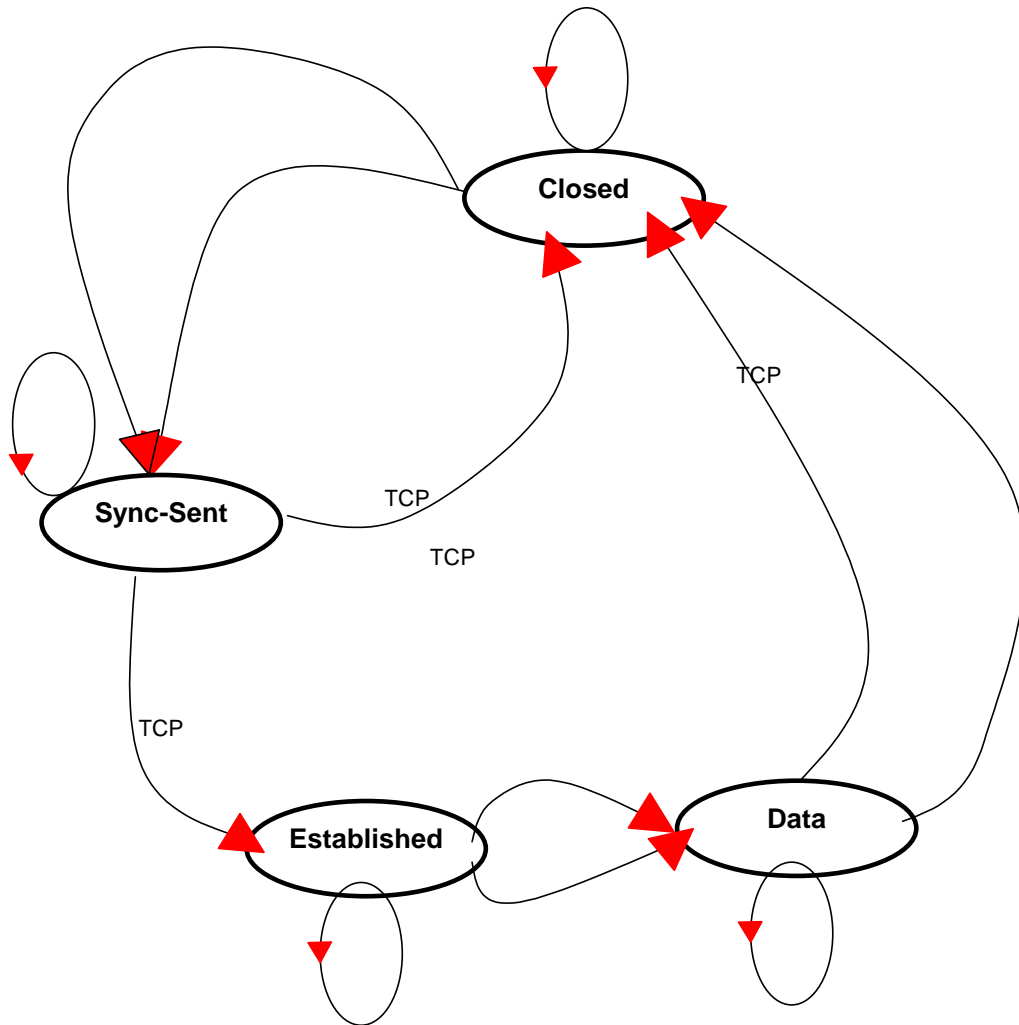
NEMO10

가 NEMO10

가

가

4-3 TCP



4-3. TCP

## 4.2.2 TCP

NEMO10 TCP

set

**set host tcpc dest\_ip dest\_port cyclic\_connection\_interval inactivity\_timeout + <CR>**

**where,**

**dest\_ip = destination IP address**

**dest\_port = destination TCP port**

**cyclic\_connection\_interval = cyclic connection interval in minutes**

**inactivity\_timeout = inactivity timeout in seconds.**

```
IP          TCP          NEMO10  TCP client
          . IP      (          )  TCP
          NEMO10
          . 0
          .          0
```

**Inactivity timeout** TCP

4-4 TCP

```
> set host tcpc 192.168.1.1 6001 10 300
OK
>
```

4-4 TCP

## 4.3 TCP /

### 4.3.1

NEMO10 TCP . TCP  
TCP TCP [Listen] .

1)

[Listen] --> [Sync-Received] --> [Established] --> [Data] --> [Closed] --> [Listen]

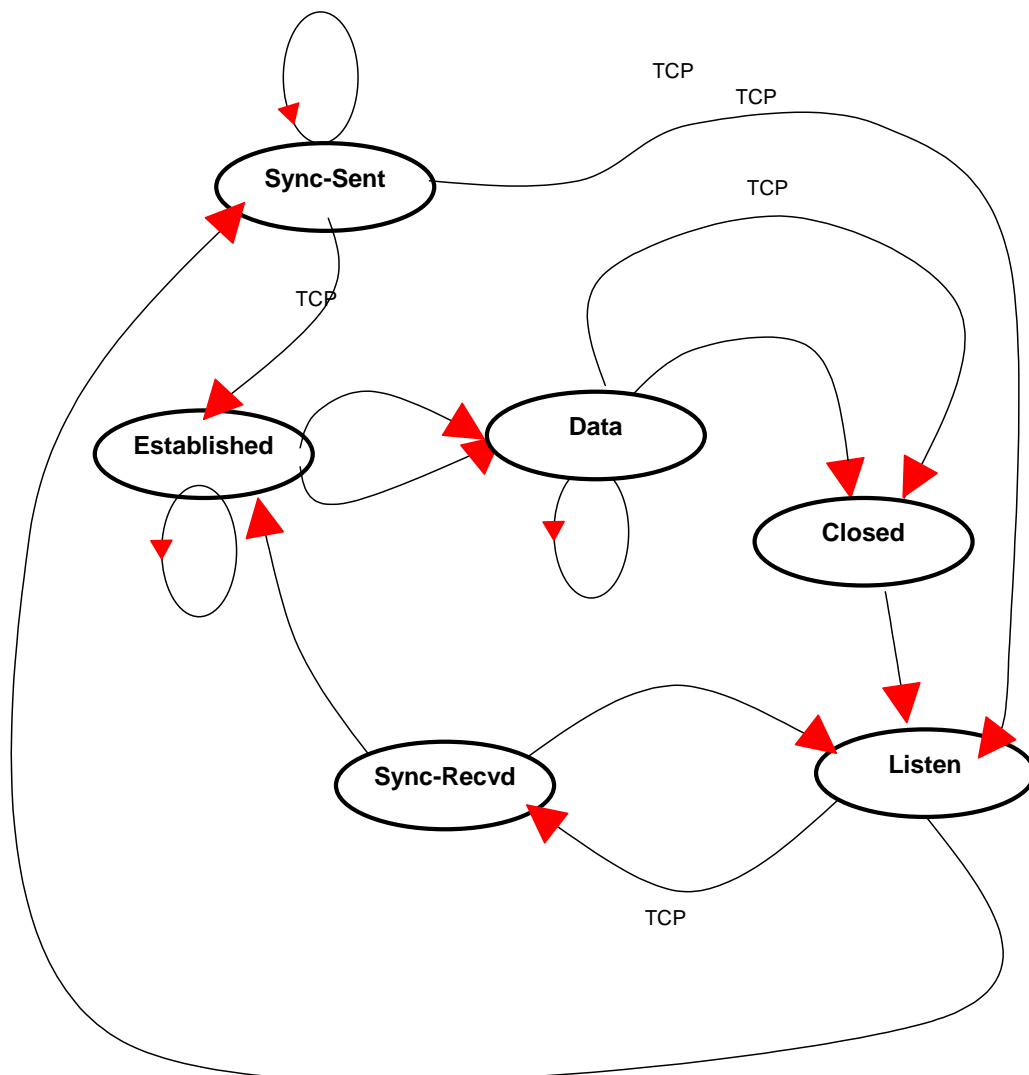
Or

[Listen] --> [Sync-Sent] --> [Established] --> [Data] --> [Closed] --> [Listen]

[Listen] . 가 TCP TCP  
TCP NEMO10

2)

TCP TCP NEMO10  
TCP TCP . TCP



4-5. TCP /

### 4.3.2 TCP /

NEMO10 TCP / 'set'

***set host tcpsc listening\_port dest\_ip dest\_port cyclic\_connection\_interval inactivity\_timeout***  
**where,**

***listening\_port = listening TCP port***

***dest\_ip = destination IP address***

***dest\_port = destination TCP port***

***cyclic\_connection\_interval = cyclic connection interval in minutes***

***inactivity\_timeout = inactivity timeout in seconds.***



TCP /

TCP

TCP

4-6 TCP /

```
> set host tcpssc 6001 192.168.1.100 7001 10 300  
OK  
>
```

4-6 TCP /

# 5:

NEMO10

5-1

5-1.

|                         | Values  |
|-------------------------|---|
| Baud rate               | 1200, 2400, 4800, 9600, 19200, 38400, 57600, or 115200              |
| Data bits               | 7 bits or 8 bits  |
| Parity                  | None, Even or Odd   |
| Stop bits               | 1 bit or 2 bits   |
| Flow control            | None, Hardware (RTS/CTS)  |
| DTR option              | Always HIGH, Always LOW, Show TCP connection                        |
| DSR option              | None, Accept TCP connection only by HIGH, Open/Close TCP connection |
| Inter-character timeout | Inter-character timeout value in milliseconds                       |

'set'

**set serial baudrate data\_bits parity stop\_bits flow\_control dtr\_option dsr\_option interchar\_timeout(ms)**

**where,**

**baudrate: 1200, 2400, 4800, 9600, 19200, 38400, 57600, or 115200**

**data\_bits: 7=7-bits / 8=8-bits**

**parity: n=none / e=even / o=odd**

**stop\_bits: 1=1-bit / 2=2-bits**

**flow\_control: n=none / h=hardware**

**dtr\_option: h=always high / l=always low / s=show tcp connection**

**dsr\_option: n=none / a=accept only by high / o=open,close TCP connection**

**interchar\_timeout: inter-character timeout value in milliseconds**

, , , 9600 bps, 8 , , 1  
 NEMO10 가 .  
 NEMO10 7 , , 1 NEMO10 2  
 . 8 , ( ) , 2

NEMO10 1

None . NEMO10 RTS/CTS

DTR/DSR TCP

. DTR , DSR NEMO10

**DTR option** *always high, always low show TCP connection* 가  
. DTR *show TCP connection* DTR TCP  
HIGH

**DSR option** *none, allow TCP connection only by high open/close TCP connection* 가  
. *Allow TCP connection only by HIGH* 가 TCP  
TCP

DSR 가 HIGH . *Open/close TCP connection* 가  
TCP . DSR *Open/close TCP*  
*connection* , DSR HIGH NEMO10  
, LOW

**Inter-character timeout** NEMO10

. 가 NEMO10  
. NEMO10 가 가 , *Inter-character*  
*timeout* TCP/IP

Inter-character timeout baud rate  
, 가 1200 bps, 8 Data bits, 1 stop bit

no parity 가 , 10  
 $10 ( ) / 1200 ( / ) * 1000 ( / ) = 8.3$

*Inter-character timeout* 8.3 ms . *Inter-character timeout*  
10 ms

*Inter-character timeout* ,

NEMO10 . NEMO10

1400

5-1 9600 bps, 7 , , 2 , , DTR

TCP , DSR , 10 ms inter-character time-out

```
> set serial 9600 7 e 2 h s n 10  
OK  
>
```

5-1

**6:**

set

***set admin username password devicename***

***username: login username***

***password: login password***

***devicename: device name***

7-1

```
> set admin adminuser adminpassword NEMO10_test1
OK
>
```

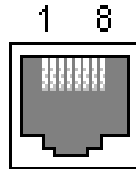
7-1

# A:

## A.1 Pin Outs

NEMO10 AT&T258

A-1



A-1. RJ45

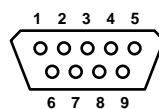
A-1. RJ45

| Pin | Description | Color             |
|-----|-------------|-------------------|
| 1   | Tx+         | White with orange |
| 2   | Tx-         | Orange            |
| 3   | Rx+         | White with green  |
| 4   | NC          | Blue              |
| 5   | NC          | White with blue   |
| 6   | Rx-         | Green             |
| 7   | NC          | White with brown  |
| 8   | NC          | Brown             |

## A.2 Pin Outs

NEMO10 DB9

A-2

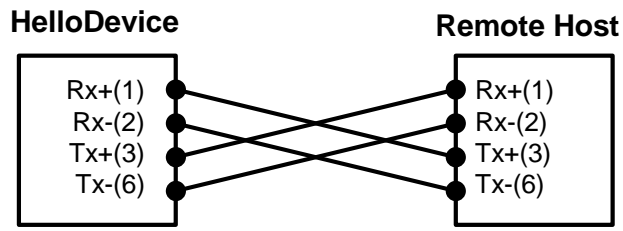


A-2. DB-9

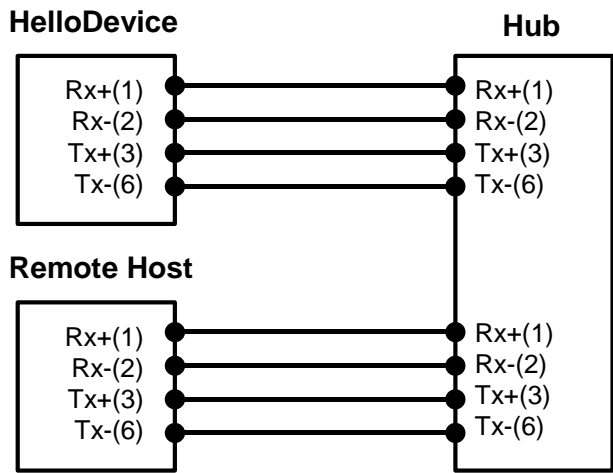
A-2. DB-9

| Pin | RS232 |
|-----|-------|
| 1   | -     |
| 2   | Rx    |
| 3   | Tx    |
| 4   | DTR   |
| 5   | GND   |
| 6   | DSR   |
| 7   | RTS   |
| 8   | CTS   |
| 9   | -     |

### A.3

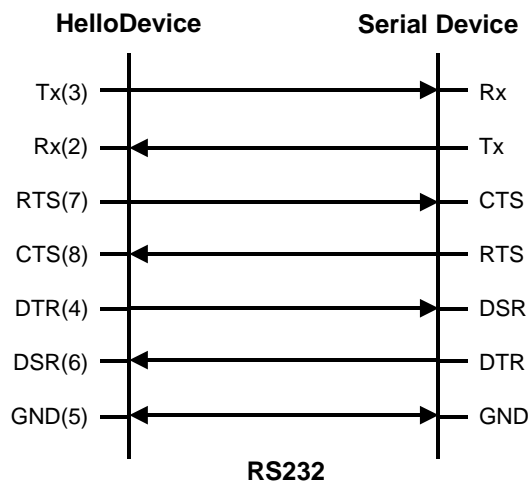


A-3



A-4

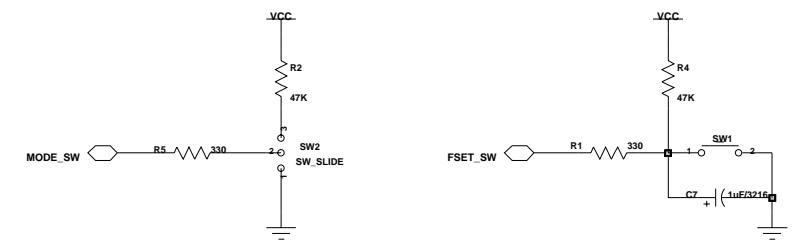
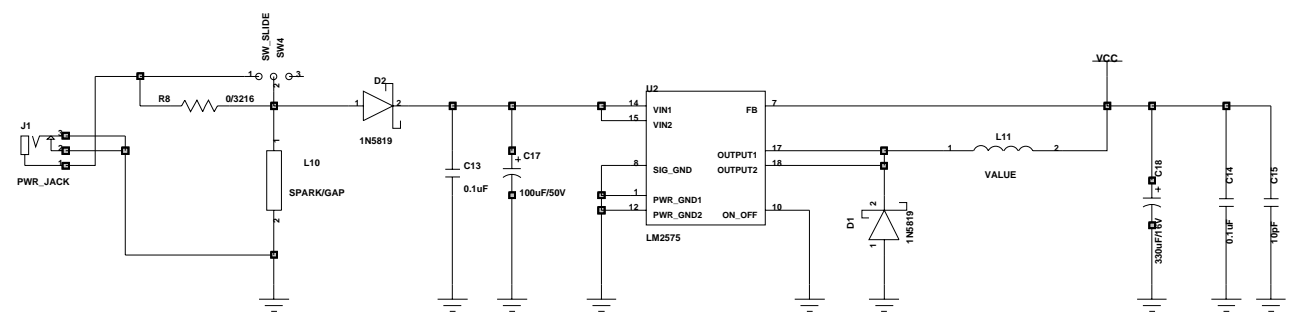
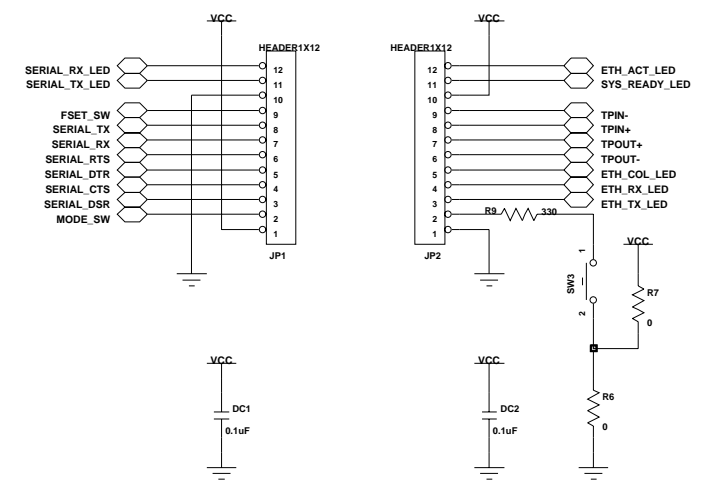
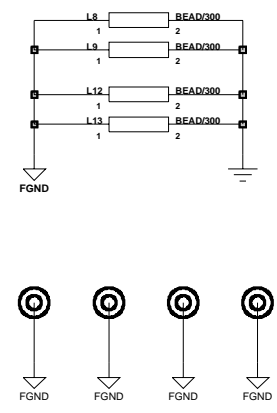
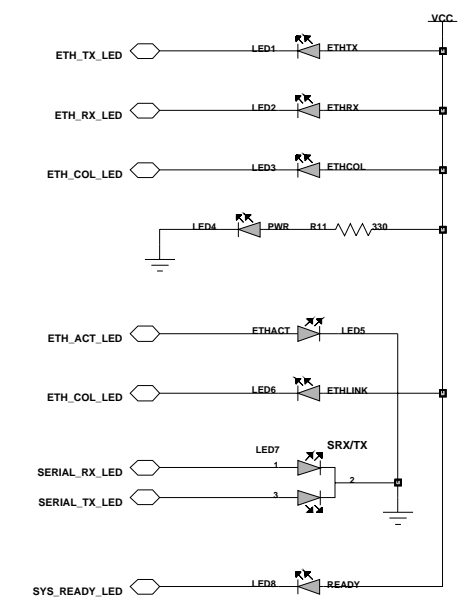
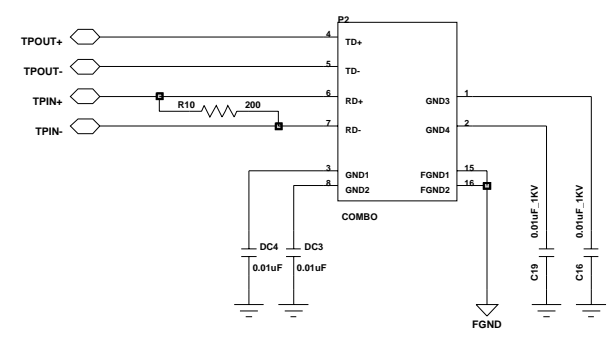
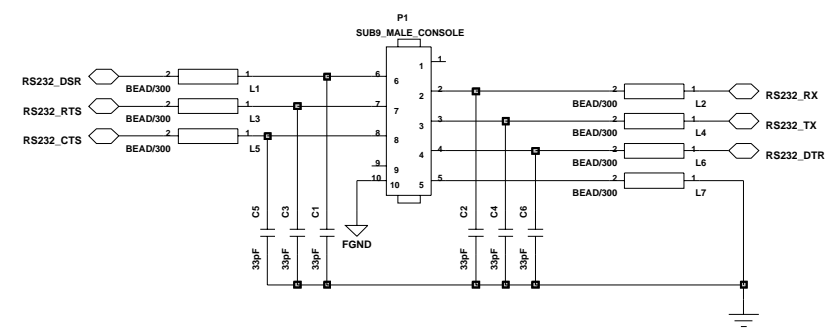
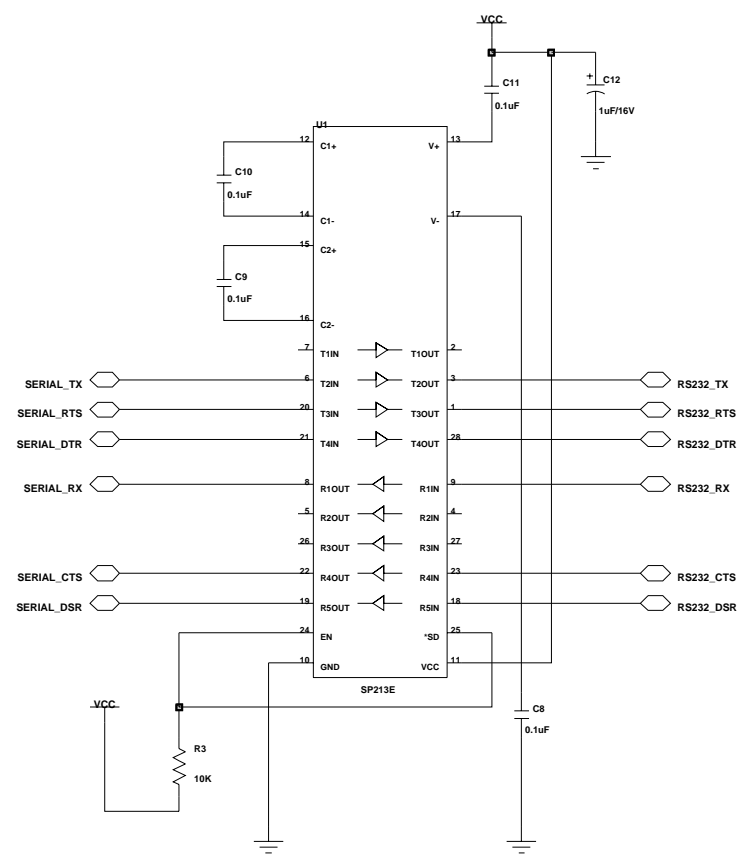
### A.4



A-5 RS232 wiring diagram

**A.5 NEMO10-SK Schematic Diagram**





|             |                   |           |
|-------------|-------------------|-----------|
| DESIGN      | CUSTOMER          |           |
| CHECK-1     | SENA-TECHNOLOGIES | REV.      |
| CHECK-2     | MODEL_NAME        |           |
| DATE        | NEMO10_SK         |           |
| 2002-08-08  | UPDATE            | SHEET 1/1 |
| REMARK      |                   |           |
| LOGICS LTD. |                   |           |

## B:

가  
0 1023 1024 49151  
49152 65535  
IANA가  
가 B - 1

IANA

URL <http://www.iana.org/assignments/port-numbers>

B-1

| Port number | Protocol                              | TCP/UDP  |
|-------------|---------------------------------------|----------|
| 21          | FTP (File Transfer Protocol)          | TCP      |
| 22          | SSH (Secure SHell)                    | TCP      |
| 23          | Telnet                                | TCP      |
| 25          | SMTP (Simple Mail Transfer Protocol)  | TCP      |
| 37          | Time                                  | TCP, UDP |
| 39          | RLP (Resource Location Protocol)      | UDP      |
| 49          | TACACS, TACACS+                       | UDP      |
| 53          | DNS                                   | UDP      |
| 67          | BOOTP server                          | UDP      |
| 68          | BOOTP client                          | UDP      |
| 69          | TFTP                                  | UDP      |
| 70          | Gopher                                | TCP      |
| 79          | Finger                                | TCP      |
| 80          | HTTP                                  | TCP      |
| 110         | POP3                                  | TCP      |
| 119         | NNTP (Network News Transfer Protocol) | TCP      |
| 161/162     | SNMP                                  | UDP      |

## C:

### C.1 /LED

| Power LED가 |    |             |
|------------|----|-------------|
| Link LED가  |    |             |
|            |    | 가<br>NEMO10 |
| ACT LED가   | IP | IP          |

### C.2

|  |                | (   |
|--|----------------|---|
|  |                | . 9600 bps, 8 Data bits, No parity, 1 stop bit, Hardware flow control |
|  | /가             | /가  |
|  | IP DHCP<br>IP가 | IP 가 DHCP<br>IP가<br>IP static IP<br>20                                |
|  | 가              | admin   |

### C.3

| Telnet<br>NEMO10 | NEMO10<br>가 IP | NEMO10 IP |
|------------------|----------------|-----------|
|                  |                | telnet    |
|                  | 가              | admin     |

### C.4 IP

| NEMO10 IP                    |                              | IP                              |
|------------------------------|------------------------------|---------------------------------|
|                              |                              | HelloDeviceManager<br>NEMO10    |
| HelloDeviceManager<br>NEMO10 | NEMO10<br>가 IP               | NEMO10 IP                       |
|                              | HelloDeviceManager<br>NEMO10 | NEMO10 PC<br>HelloDeviceManager |

### C.5 DHCP

| IP             | DHCP 가 | DHCP 가 |
|----------------|--------|--------|
| NEMO10 IP<br>가 | DHCP 가 | DHCP 가 |

## C.6 TCP

| NEMO10        | IP          | IP                  |
|---------------|-------------|---------------------|
| NEMO10<br>TCP | 가<br>가      | NEMO10 / TCP TCP    |
| NEMO10<br>TCP | IP<br>가     | NEMO10 IP TCP       |
| DSR<br>HIGH   | DSR<br>HIGH | DSR HIGH NEMO10 DSR |
| TCP           |             | TCP                 |

## C.7

| TCP/IP | 가<br>Inter-character timeout<br>가 | Inter-character timeout |
|--------|-----------------------------------|-------------------------|
| NEMO10 |                                   | NEMO10                  |
| 가      |                                   |                         |