

NEMO10 / NEMO10-SK

사용자 매뉴얼

Version 1.2.4

2005-11-8

User Guide for the NEMO10/NEMO10-SK

버전 1.2.4

펌웨어 버전 1.3.X

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1:

1.1

NEMO10

가

NEMO10 DIL (Dual-In-Line) 가

. NEMO10 RS232

NEMO10

SK, 가
가

. NEMO10-SK

가

가 NEMO10-
CD-ROM, 가

NEMO10 TCP/IP
LAN()

NEMO10

telnet

. HelloDevice Manager .

NEMO10

/POS, ,

1.2 패키지 체크 리스트

NEMO10

NEMO10 DIL 모듈

NEMO10-SK

- NEMO10 DIL 모듈
- NEMO10 테스트용 평가보드
- 110V 또는 230V 전원 어댑터
- Ethernet CAT5 케이블
- 시리얼 콘솔/데이터 케이블
- HelloDevice Manager, Serial/IP™ 및 사용 설명서가 포함 된 CD-ROM

1.3 NEMO10 제품 사양

하드웨어	프로세서 80C51 8-bit microprocessor
	메모리 32KB SRAM, 64KB EEPROM
시리얼 인터페이스	Built-in UART
	시리얼 속도 1200bps ~ 115.2kbps
	흐름 제어: None 또는 하드웨어 RTS/CTS 신호: Rx, Tx, RTS, CTS, DTR, DSR, GND
네트워크 인터페이스	10 Base-T 이더넷
	고정 및 유동 IP 주소 지원
프로토콜	ARP, IP/ICMP, TCP, Telnet, DHCP client, PPPoE
보안	사용자 ID 및 비밀번호
관리	Telnet이나 시리얼 콘솔 포트 또는 HelloDevice Manager
	다양한 시스템 상태 표시 기능
외부 인터페이스	24-핀 외부 인터페이스 시리얼 인터페이스, 이더넷 인터페이스 LED 인터페이스, 스위치 인터페이스, 전원 인터페이스, 기타
전원	공급 전압 5VDC +/- 10%
	공급 전류 60mA @ 5VDC
환경	작동 온도: 0 ~ 50 °C 보관 온도: -20 ~ 66 °C 습도: 90% (Non-condensing)
물리적 특성	크기 45 mm L (1.8 in.) * 45 mm W (1.8 in.) * 18.5 mm H (0.7 in.)
품질 보증 기간	1년

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

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

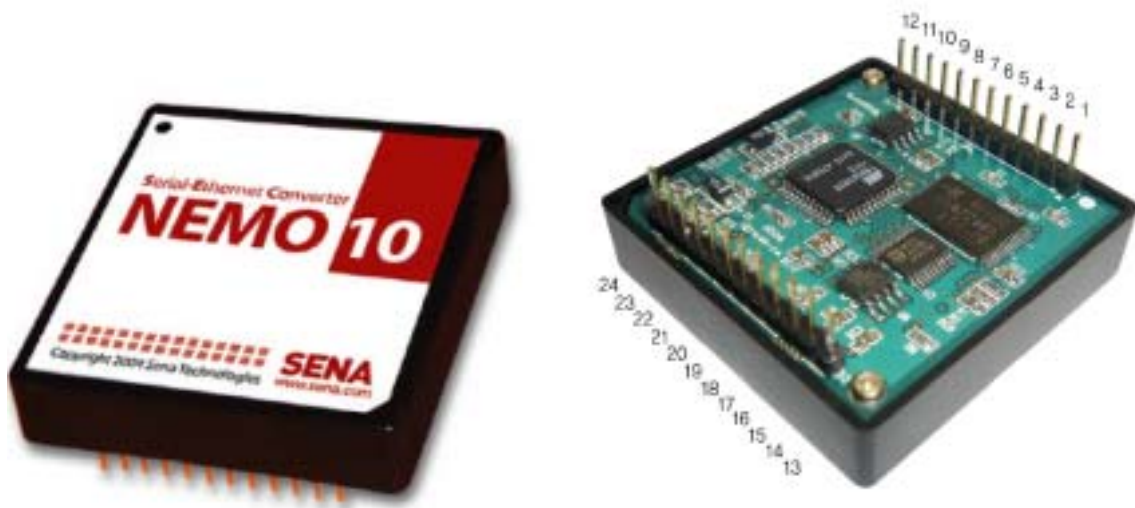
2.1

2.1.1 NEMO10

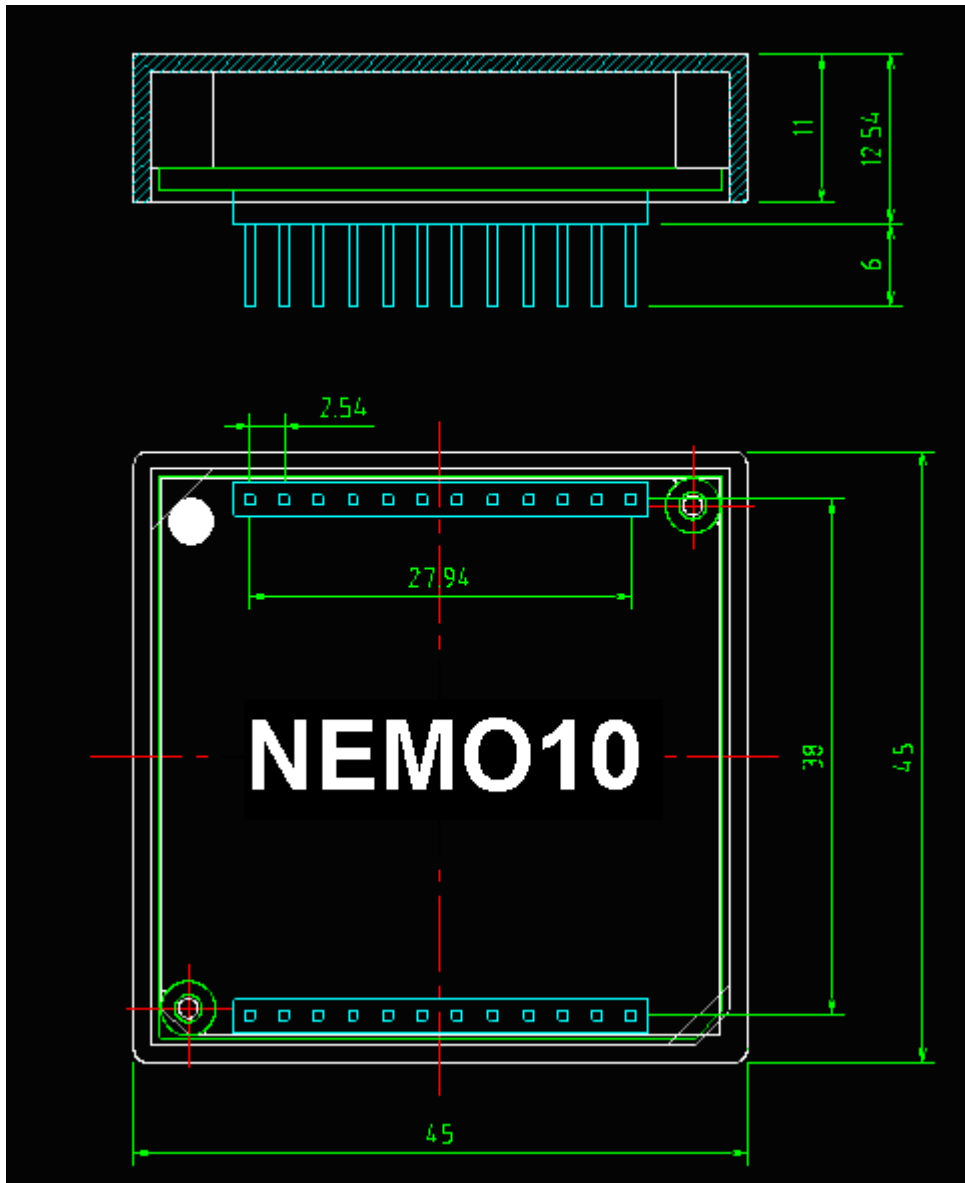
NEMO10 DIL(Dual-In-Line) . NEMO10 , , LED,
UART RJ45 . 2-1 NEMO10
, 2-1 NEMO10 .

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 (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

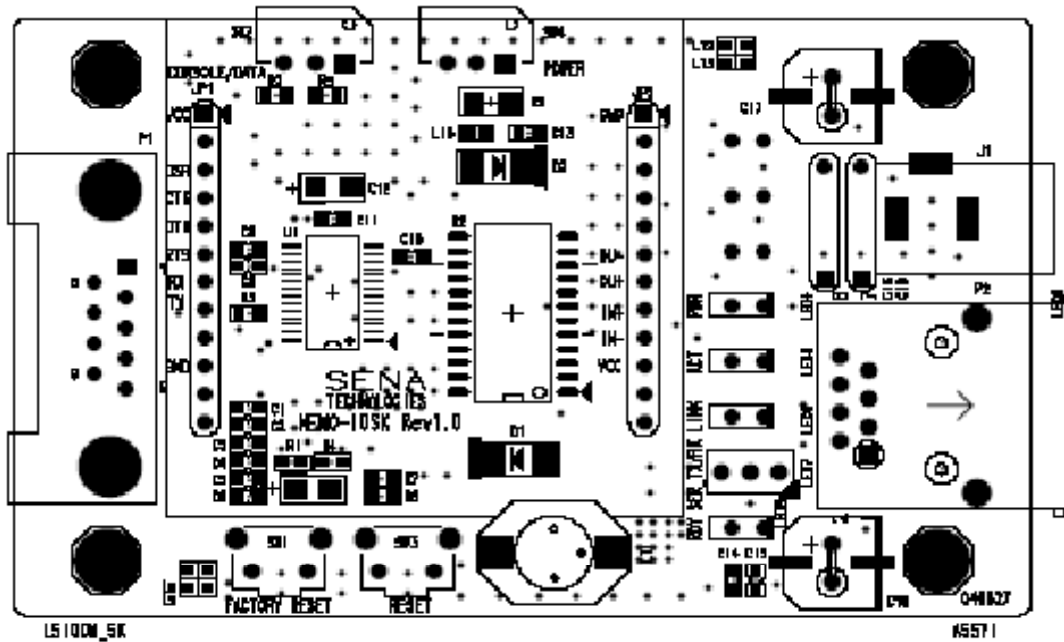
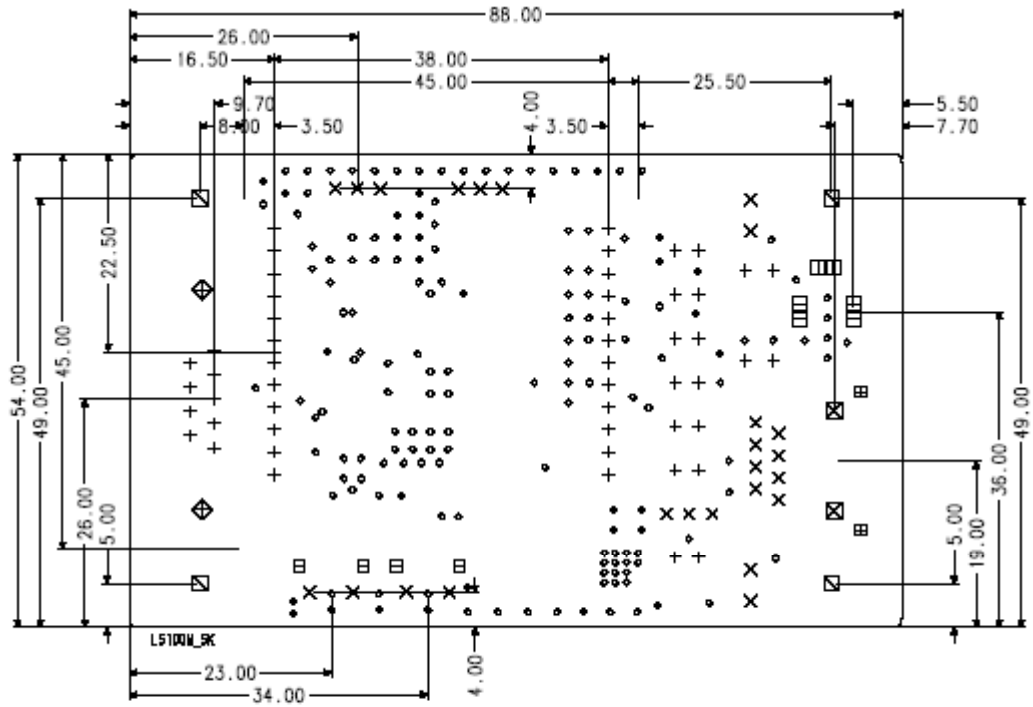
NEMO10-SK

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 (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)

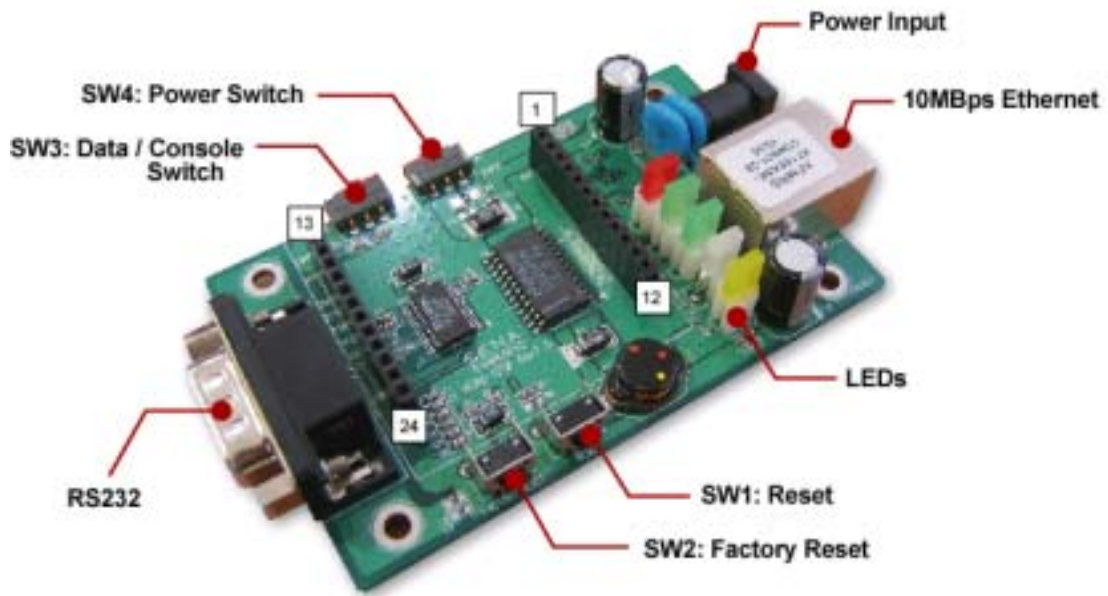
2-3 가 LED

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



2-2.

가



2-3 NEMO10 가 NEMO10-SK

2.2

, 가 NEMO10 가

- NEMO10 가

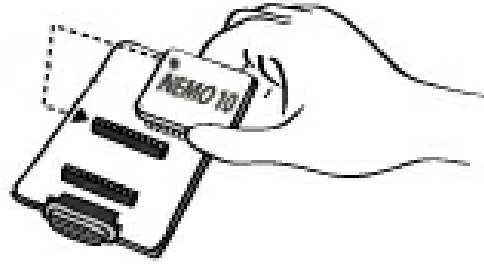
- 가

- 가

- 가

2.2.1 NEMO10 가

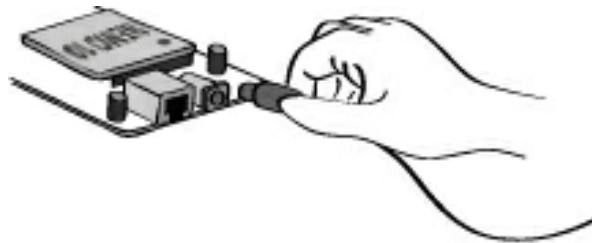
NEMO10 가 2-4



2-4. NEMO10 가

2.2.2

DC 가 [] LED가



2-5. 가

2.2.3

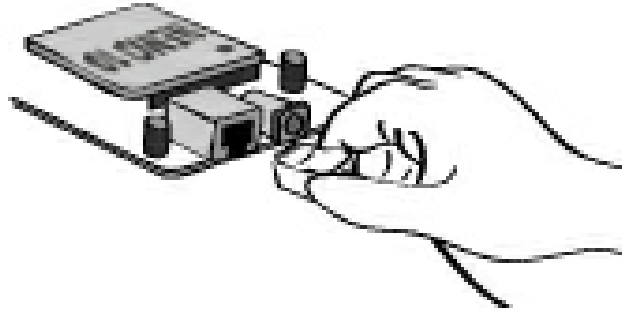
가 10Base-T NEMO10

LED가

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

가

NEMO10 가 가



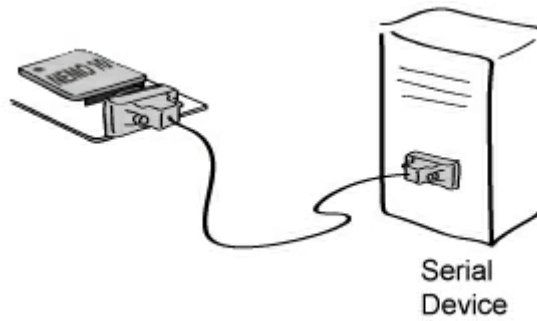
2-6.

가

2.2.4

가
가

NEMO10



2-7. NEMO10

2.3.

가 NEMO10

가 가

- :

/ () NEMO10

. NEMO10

/

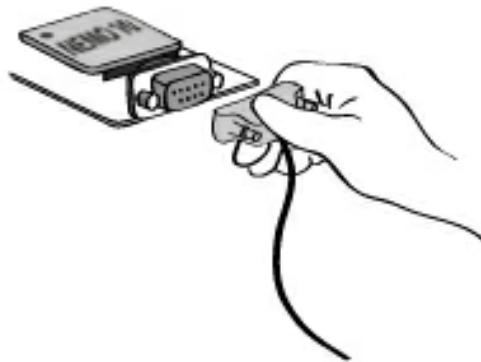
- :

TCP/IP NEMO10 (23) telnet

NEMO10

2.3.1

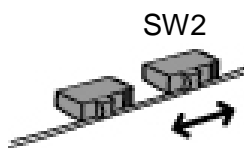
1) NEMO10 가



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

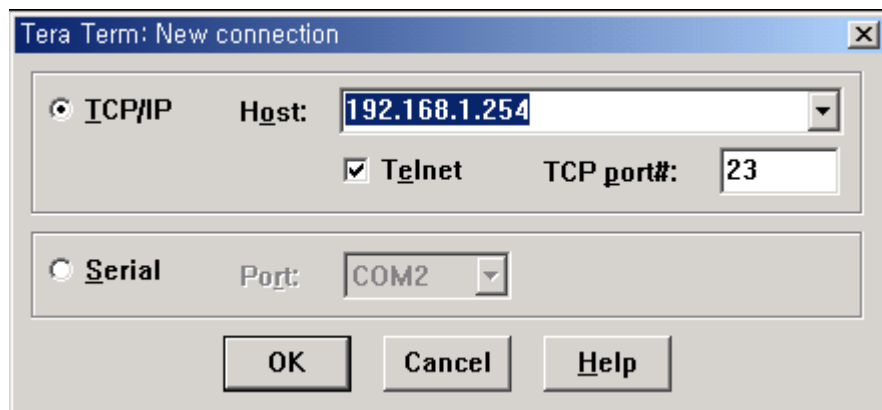
NEMO10 telnet
NEMO10 가
NEMO10 IP telnet
TCP 23

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 ...] + <CR>	- group = 'ip', 'host', 'serial' 'admin' - par1 ... = *	' "OK" + <CR> + <LF> If error "ERROR" + <CR> + <LF>
get [group] + <CR>	- group = 'ip', 'host', 'serial', 'admin' 'status' - -	
help [group] + <CR>	- - .. 'set'	
factorydefault [option] + <CR>	- , 가 - if option='-ip' IP 가	' "OK" + <CR> + <LF> 가 "ERROR" + <CR> + <LF>
save + <CR>		' "OK" + <CR> + <LF> 가 "ERROR" + <CR> + <LF>
exit + <CR>) (' "OK" + <CR> + <LF> 가 "ERROR" + <CR> + <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 PPPoE

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

TCP	NEMO10 TCP . NEMO10 TCP TCP NEMO10 가 TCP 가 TCP
TCP	NEMO10 TCP 가 TCP NEMO10 TCP NEMO10 가 NEMO10 가
TCP /	NEMO10 TCP 가 NEMO10

4-2

4-2

TCP Server	Listening TCP port
	Inactivity timeout (sec)
TCP Client	Destination IP
	Destination TCP Port
	Cyclic connection Interval
	Inactivity timeout (sec)
TCP Server/Client	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)

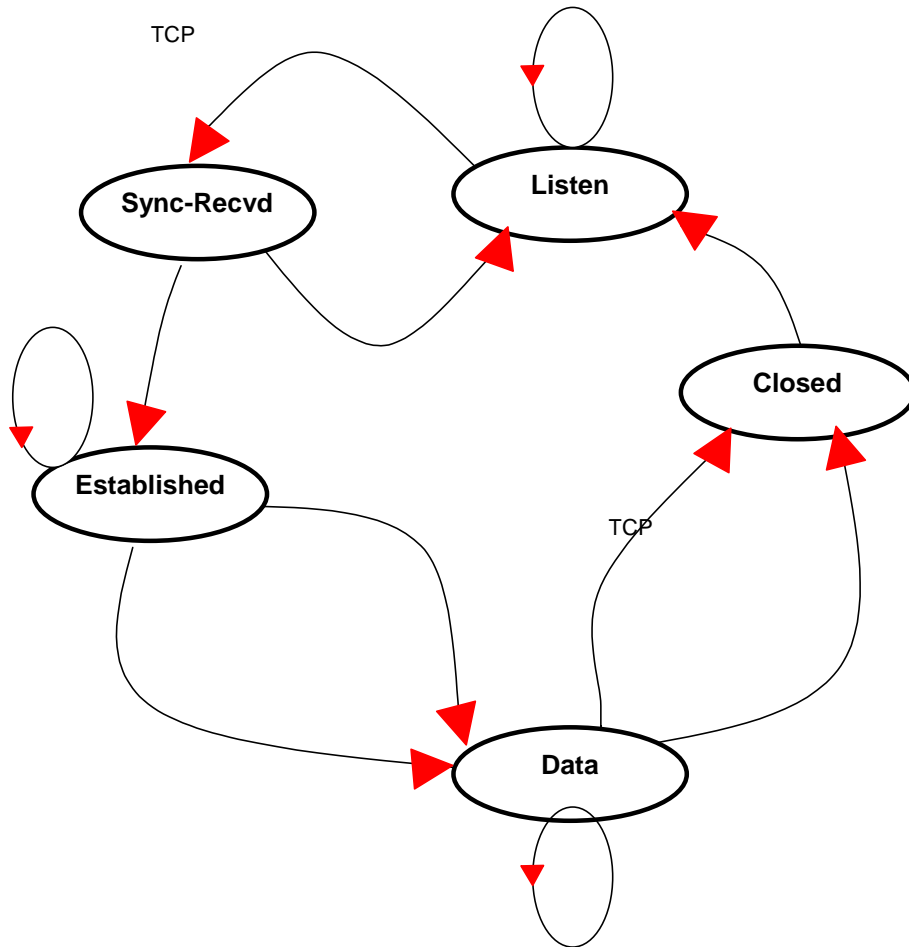
[Listen] --> [Sync-Received] --> [Established] --> [Data] --> [Closed] --> [Listen]

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

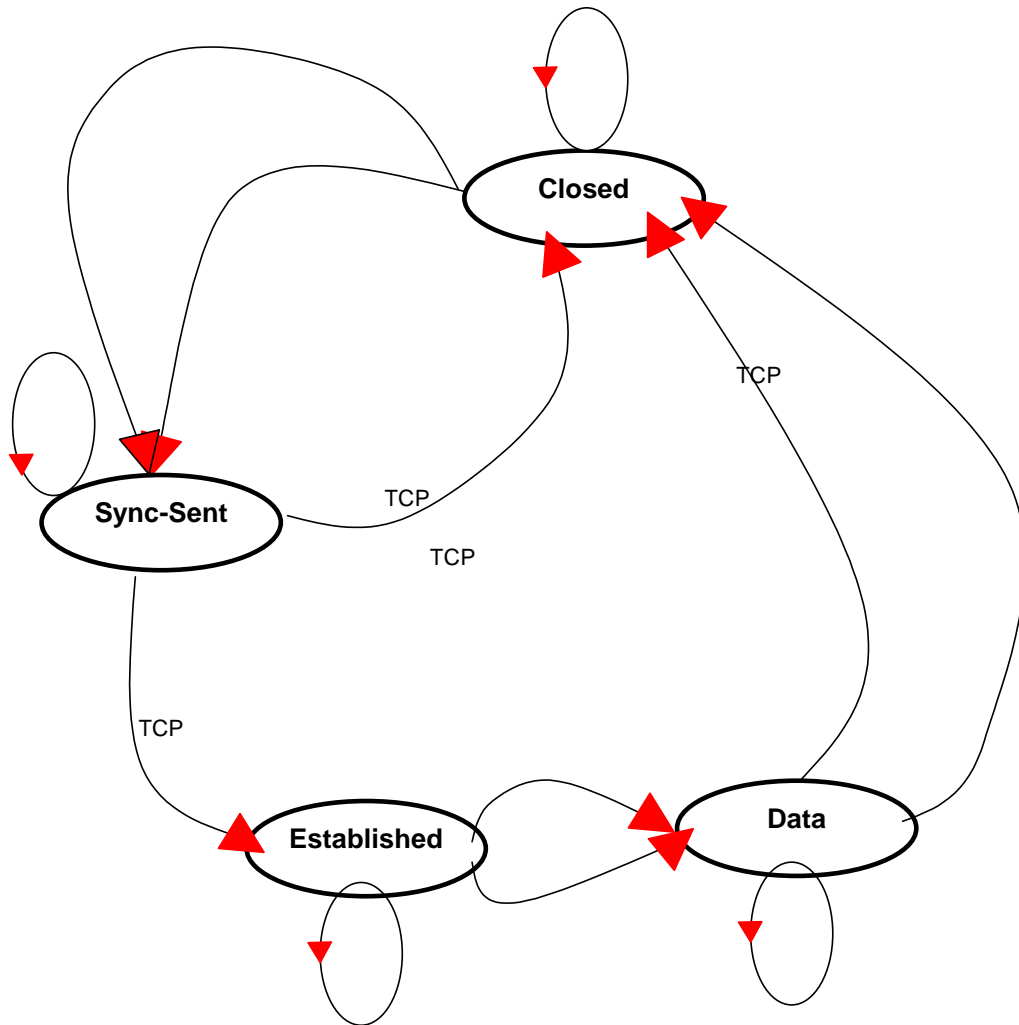
NEMO10

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]

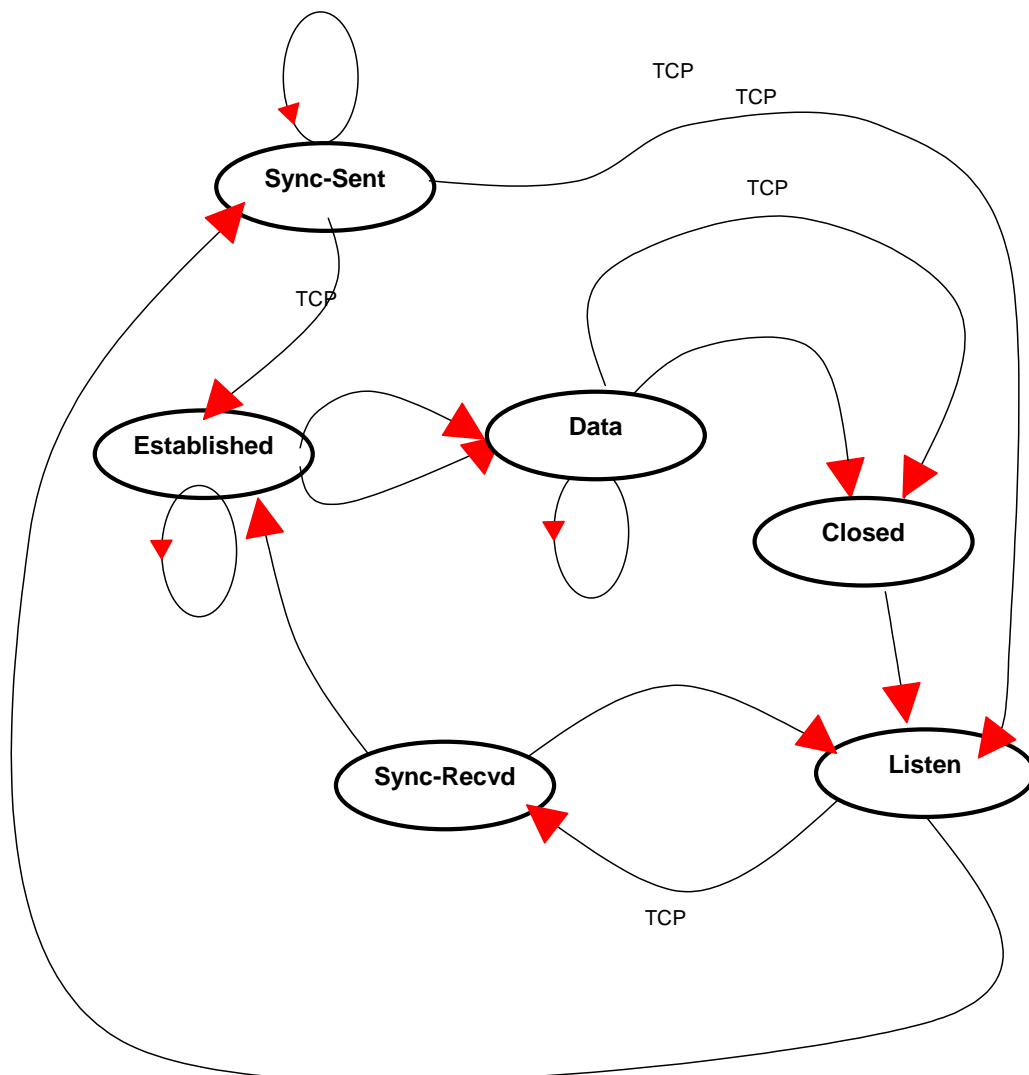
Or

[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
>
```

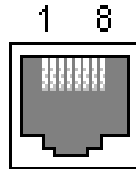
7-1

A:

A.1 Pin Outs

NEMO10 AT&T258

A-1



A-1. RJ45

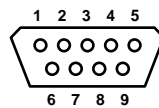
A-1. RJ45

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

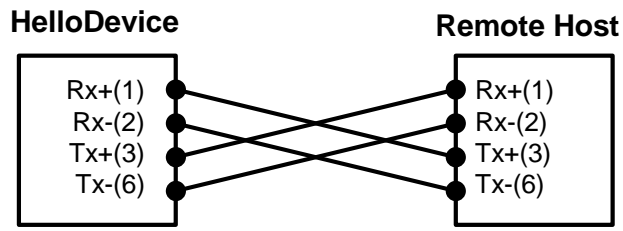


A-2. DB-9

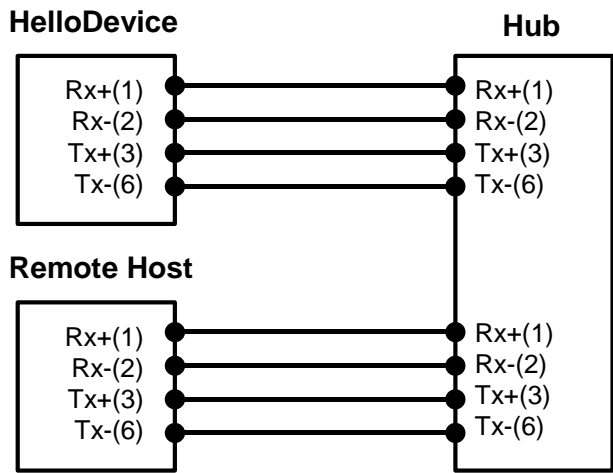
A-2. DB-9

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

A.3

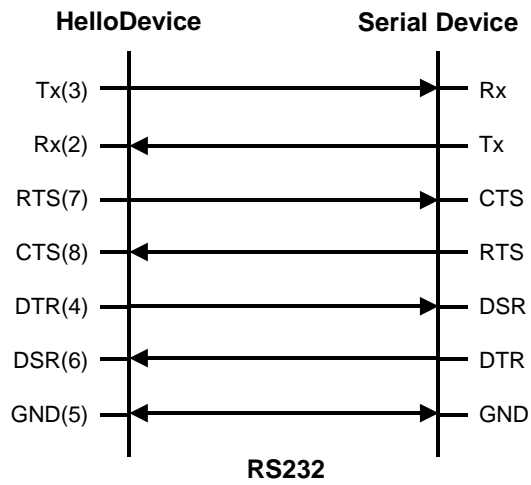


A-3



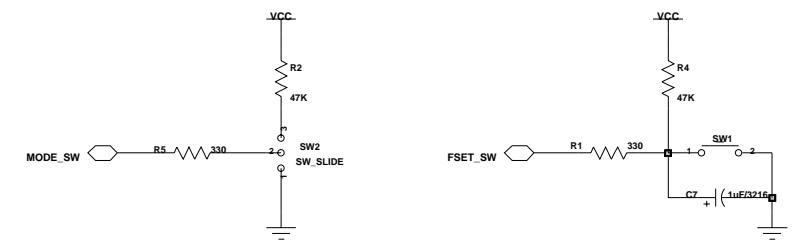
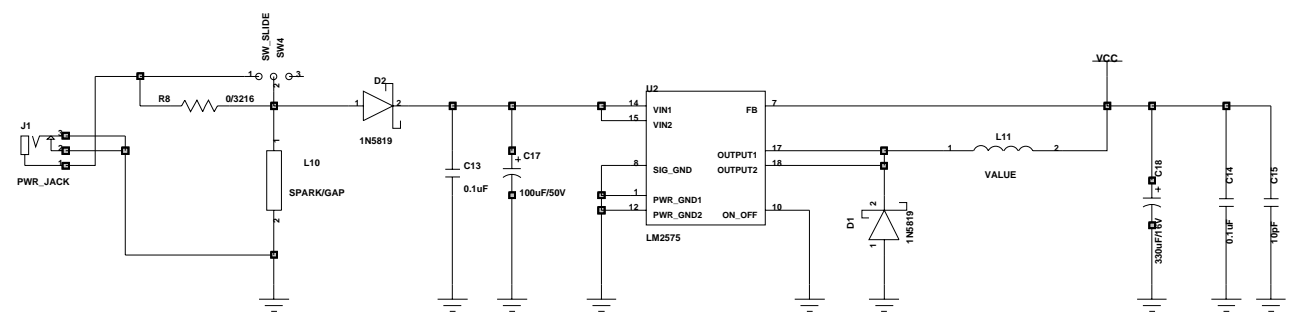
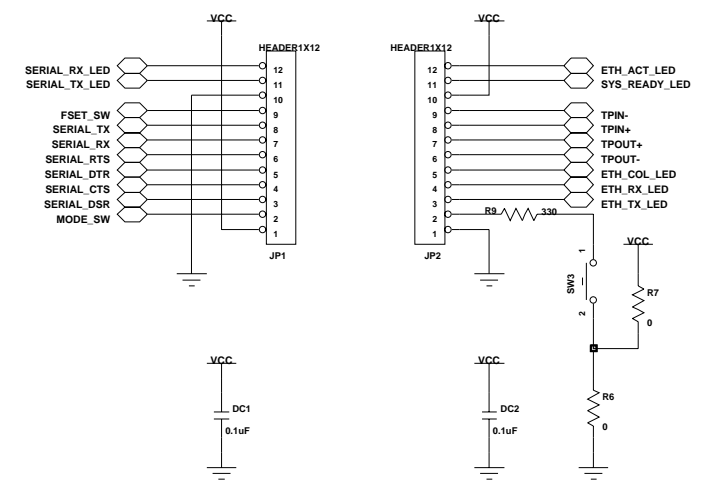
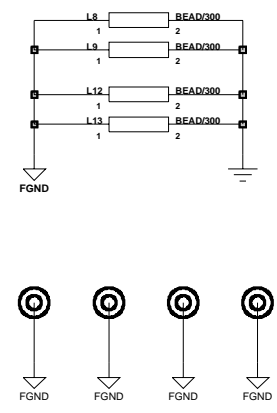
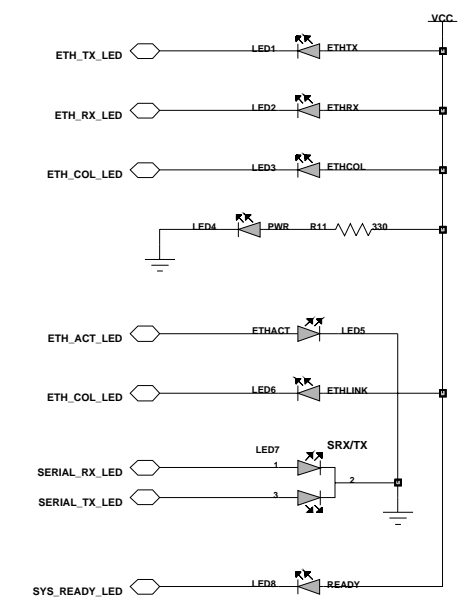
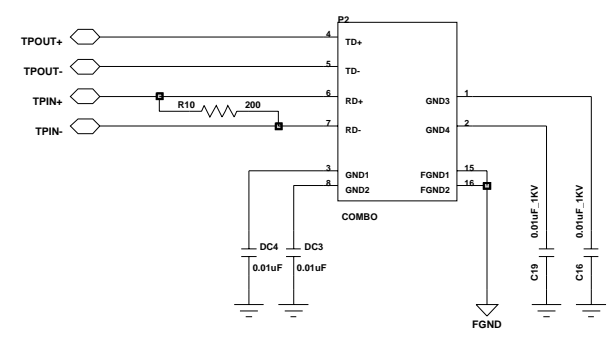
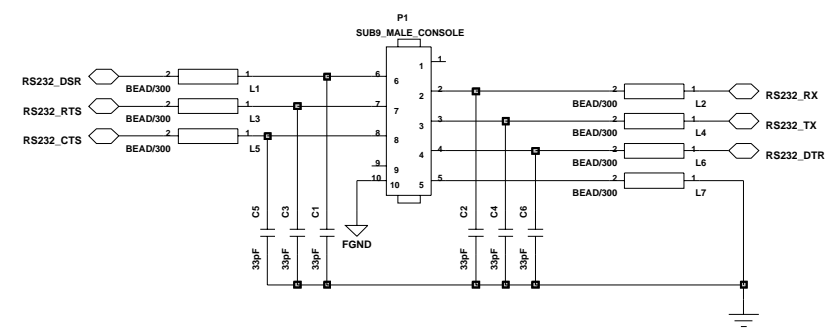
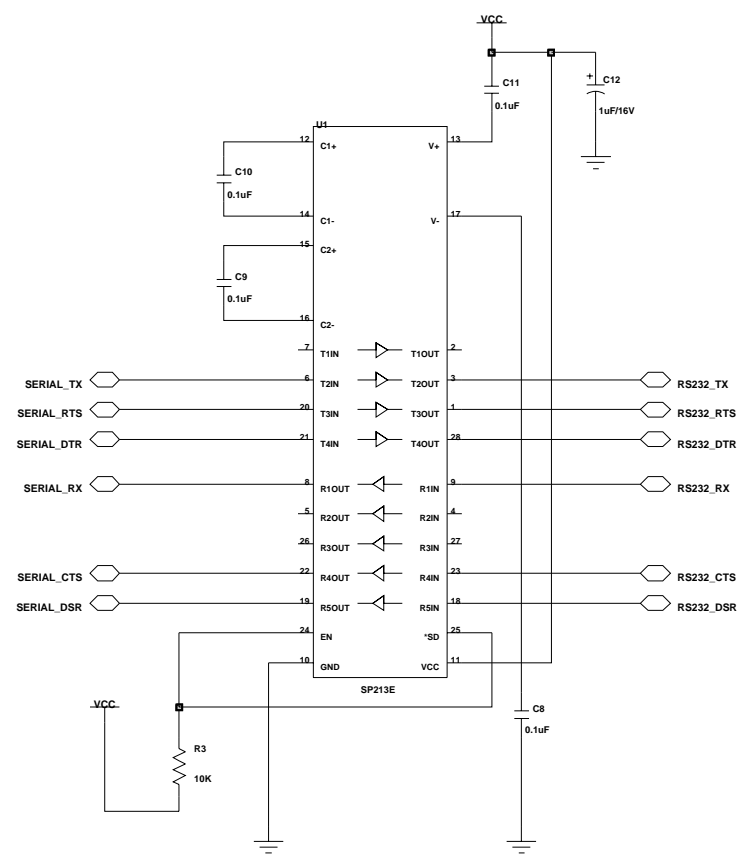
A-4

A.4



A-5 RS232 wiring diagram

A.5 NEMO10-SK Schematic Diagram



DESIGN	CUSTOMER		SENA-TECHNOLOGIES
CHECK-1	MODEL_NAME	REV.	
CHECK-2	NEMO10_SK		
DATE	UPDATE	SHEET	1/1
2002-08-08			
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 NEMO10
ACT LED가	IP	IP

C.2

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

C.3

Telnet NEMO10	NEMO10 가 IP	NEMO10 IP
		telnet
	가	admin

C.4 IP

NEMO10 IP		IP
		HelloDeviceManager NEMO10
HelloDeviceManager NEMO10	NEMO10 가 IP	NEMO10 IP
	HelloDeviceManager NEMO10	NEMO10 PC HelloDeviceManager

C.5 DHCP

IP	DHCP 가	DHCP 가
NEMO10 IP 가	DHCP 가	DHCP 가

C.6 TCP

NEMO10	IP	IP
NEMO10 TCP	가 가	NEMO10 / TCP TCP
NEMO10 TCP	IP 가	NEMO10 IP TCP
DSR HIGH	DSR HIGH	DSR HIGH NEMO10 DSR
TCP		TCP

C.7

TCP/IP	가 Inter-character timeout 가	Inter-character timeout
NEMO10		NEMO10
가		