



Starter's Kit for HelloDevice 1300

Version 1.1

가

가

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, HelloDevice / 가

1

2

3

3.1

3.2

3.3

3.4

3.5

3.6

4

4.1

4.2

4.3

5

5.1

5.2

6

6.1

6.2

Appendix A.

(cross-over)

IP

1.

▶ HelloDevice 1300 Starter's Kit

	HelloDevice 1300	1
	5V (SMPS)	1
	RS232 DSUB	1
	HelloDevice (http://www.sena.com)	1
		1



- = 5 V DC ±10%
- = 200mA
- = 0 ~ 95%
- = 0 ~ 50



137-130 210

: (02) 573-7772

: (02) 573-7710

Email : support@sena.com

<http://www.sena.com>

2.

HelloDevice

HelloDevice1x00

10 Base-T

. HelloDevice 1x00

(HelloDevice 1100)

(HelloDevice 1200),

(HelloDevice 1300)

. HelloDevice

가 .

HelloDevice 1x00

2.1 .

	HelloDevice 1100	HelloDevice 1200	HelloDevice 1300
CPU	Scenix Sx52BD (8-Bit , 50 MIPS)		
	512 KB ()		
	10 Base-T (IEEE802.3)		
	16 16	2 KB	1 RS-232/485 38400 bps
	HTTP ¹ / SMTP / BOOTP		
	TCP / UDP		
	IP / ICMP / ARP		
	(IEEE802.3)		
	HelloDevice (95/98/NT/2000) : IP ,		

2.1 HelloDevice 1x00

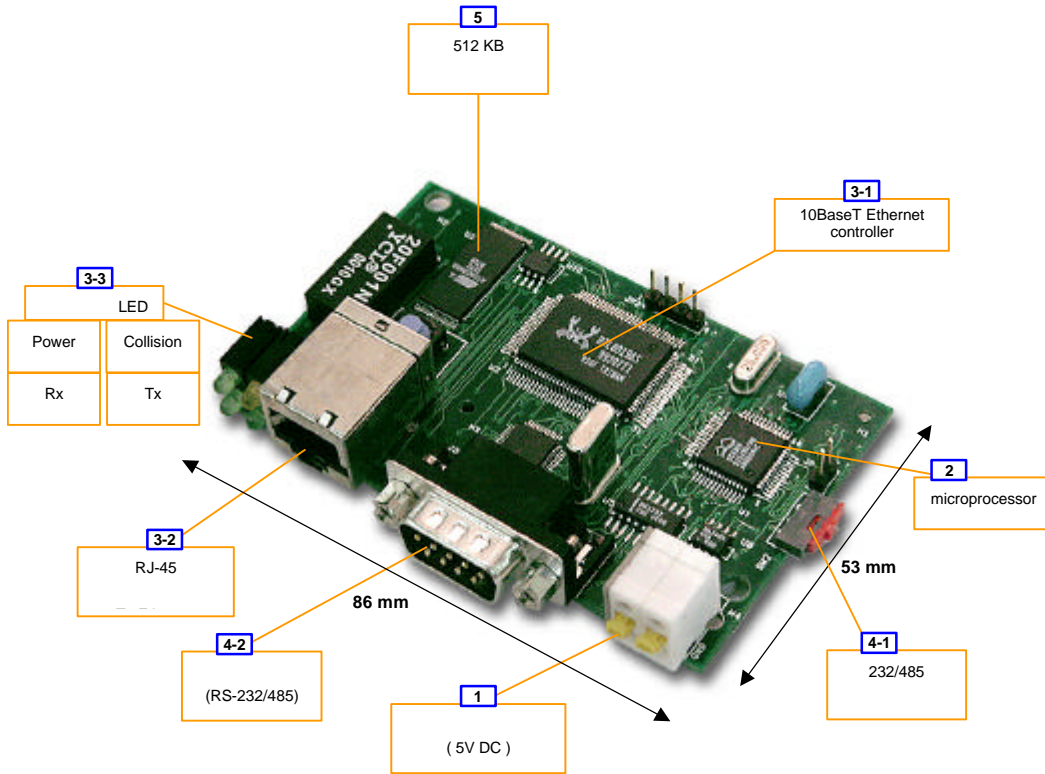
¹ HTTP 1.1 .

3.

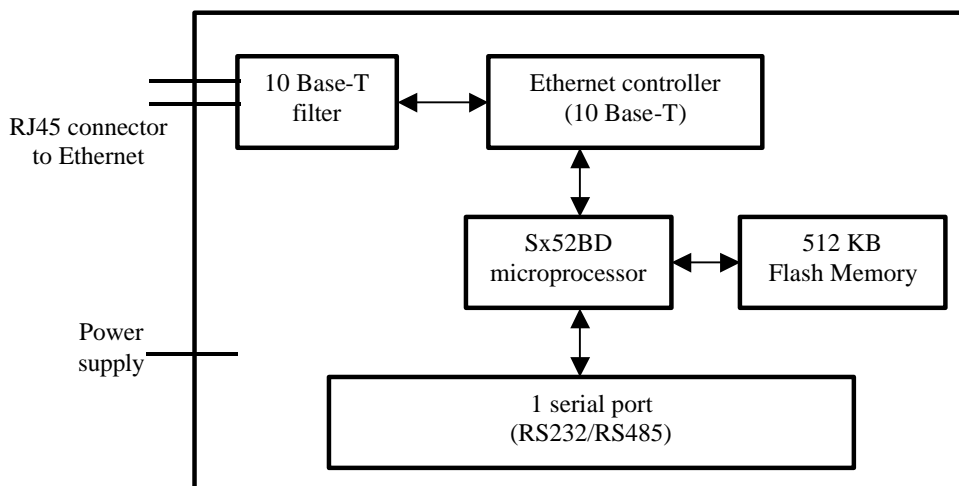
HelloDevice 1300

3.1

3.2



3.1. HelloDevice 1300



3.2. HelloDevice 1300

3.1

- = 5 V DC \pm 10%
- = 200mA

3.2

- Scenix Sx52BD 8-bit
- 4 KByte
- 52 PQFP (3.1, [2])

3.3

HelloDevice RJ45 , 100m
가 .

3.3.1

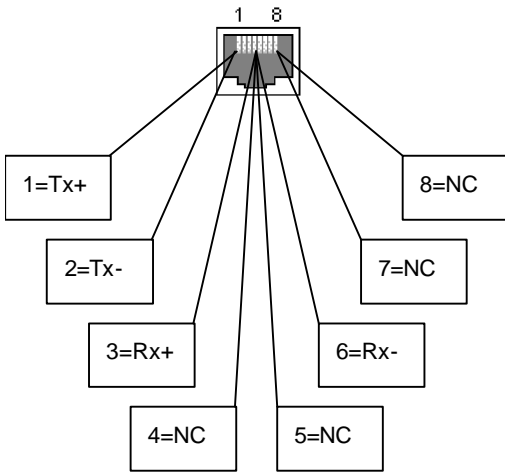
(3.1, [3-1]).

:

- RealTek Full-duplex : RTL8019AS
- IEEE802.3 10 base-5 , 10 base-2 , 10 base-T
- 16 Kbyte SRAM
- NE2000

3.3.2 RJ45

- AT&T258 Shield (3.1, [3-2])



Pin		
1	Tx+	White with orange
2	Tx-	Orange
3	Rx+	White with green
4	Not used	Blue
5	Not used	White with blue
6	Rx-	Green
7	Not used	White with brown
8	Not used	Brown

3.3 RJ45

3.3.3 LED

LED Tx, Rx, Collision, Power LED 4 가 (3.1, [3-3]),

- **Power LED**

HelloDevice ON

- **Rx LED**

- **Tx LED**

HelloDevice 1 / , ping, PC 가 /

- **Collision LED**

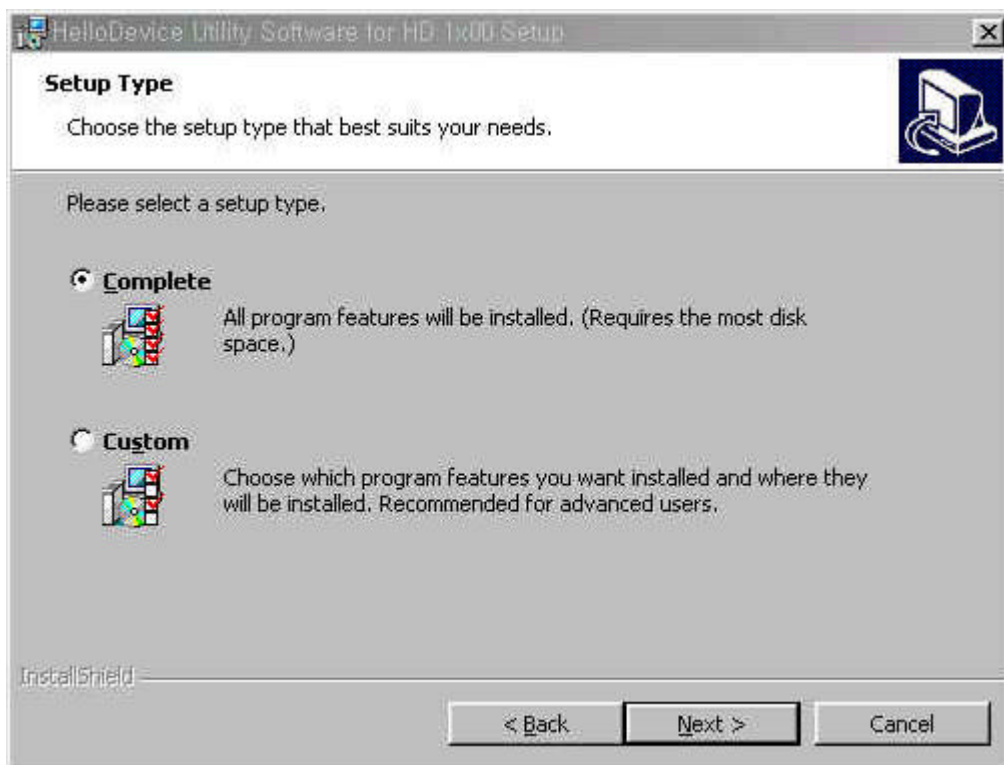
4.

HelloDevice 1300

- (1) HelloDevice
- (2) HelloDevice
- (3) HelloDevice IP
- (4) HelloDevice

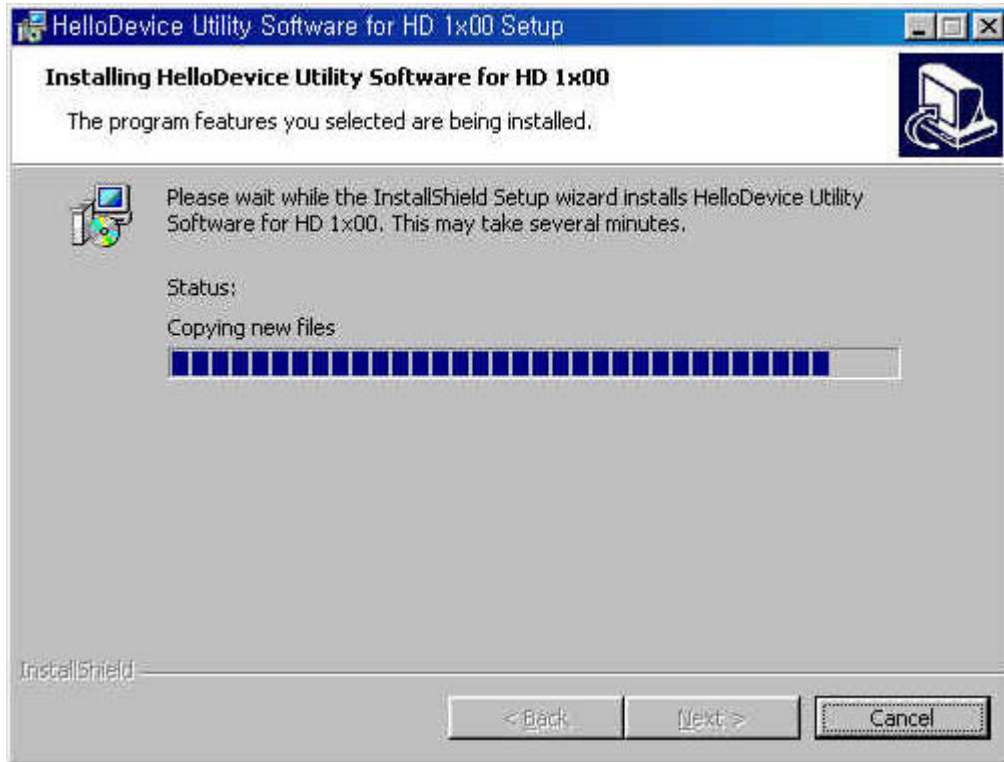
4.1

	PC	HelloDevice CD-ROM	setup1x00.exe	.
Setup1x00.exe		95/98, NT	2000	. setup type
[Complete]		[Next]		.



4.1 HelloDevice

c:\Program Files\HelloDevice utility

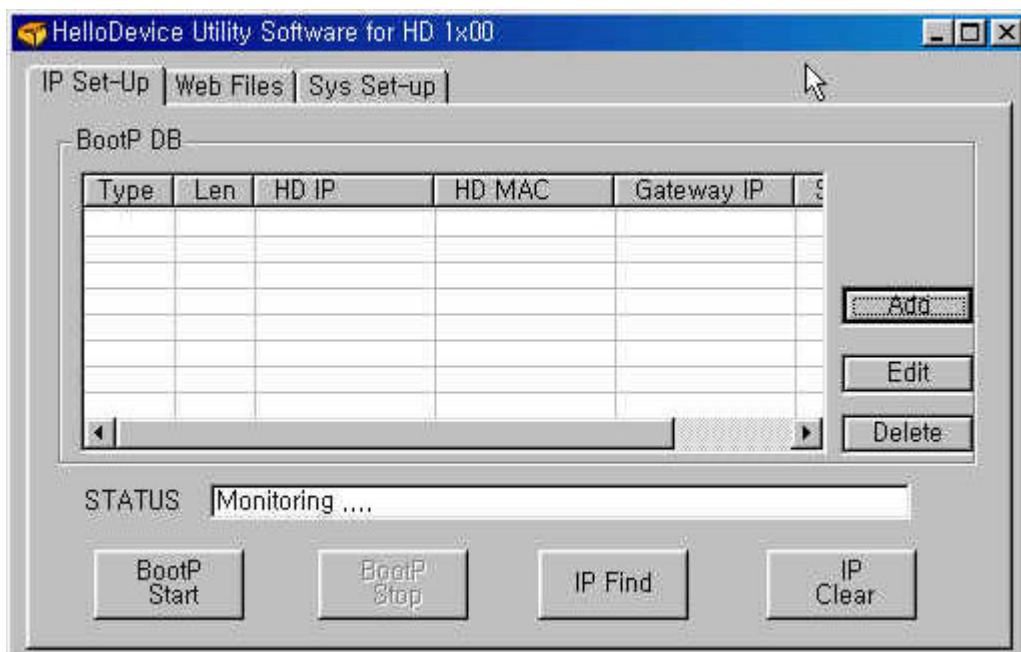


4.2 HelloDevice

가

HelloDevice
HelloDevice

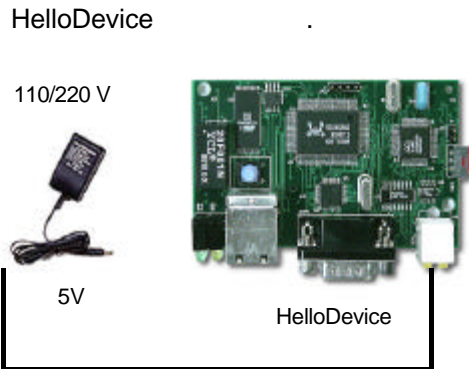
가



4.3 HelloDevice

4.2

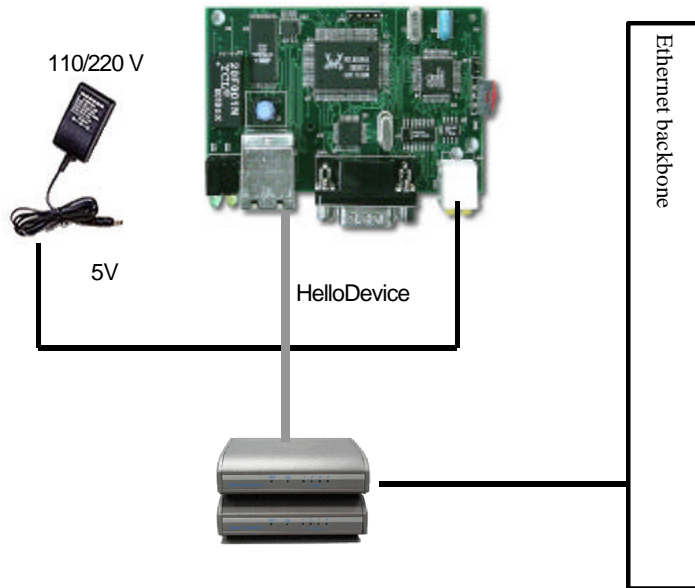
(1) 5V



4.4. HelloDevice 5V

(2) RJ45

(HelloDevice RJ45 3)



4.5. HelloDevice

(3) HelloDevice

(3.1 [LED Tx LED 가 1 / LED])

4.3

HelloDevice 가 , HelloDevice IP . , IP .

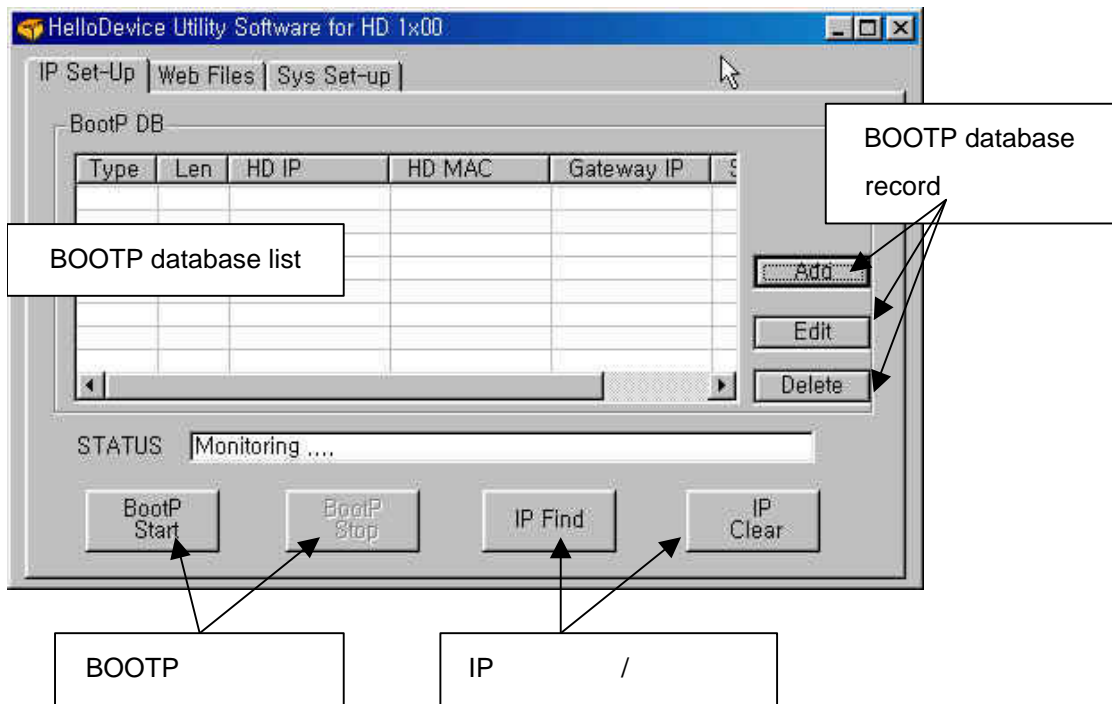
4.3.1 IP

HelloDevice IP HelloDevice ,
 RFC-951, RFC-1542 BOOTP (BOOTstrap Protocol)
 . BOOTP BOOTP HelloDevice
 BOOTP .

HelloDevice IP 0.0.0.0 , ,
 BOOTP 가 IP , HelloDevice TxLED 가
 . (3.1 [LED])

HelloDevice IP IP ,
 HelloDevice MAC²-IP IP .
 HelloDevice IP 가 IP .
 , 가 IP .
 HelloDevice IP .

² MAC , 6 byte . HelloDevice MAC MAC
 00-01-95 xx-xx-xx .
) 00-01-95-01-aa-08, 00-01-95-01-02-01



4.6 HelloDevice

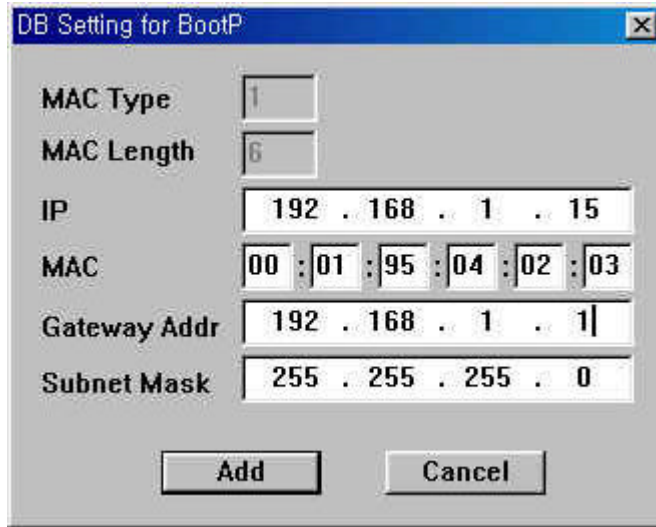
IP

HelloDevice

IP

(1) PC HelloDevice 가 , [IP Set-up]
 [IP Set-up] .
 BOOTP IP ([BootP Start], [BootP Stop]), IP
 ([IP Find]) ([IP Clear]) .

(2) [Add] , BOOTP .



4.7 BOOTP

HelloDevice MAC IP . H/W address type H/W address length
 HelloDevice 가 , 1 6 . MAC
 HelloDevice IC . 4.7 ,
 MAC 가 00:01:95:04:02:03 , HelloDevice IP 가 192.168.1.15
 . , HelloDevice BOOTP
 (Broadcast message) , IP

(3) [Add]

, (2) 가 IP 가 .

(4) [BootP Start] , BOOTP

HelloDevice BOOTP . [Status] 가 "Monitoring"
 "Listening BOOTP request"
 BootP DB List HelloDevice BootP 가 HelloDevice
 "DB Setting for BootP" BootP DB

(5) HelloDevice TX LED

HelloDevice IP , HelloDevice IP
 . , [Status] "BootP reply sent... [192.168. 1. 15]"
 . HelloDevice TX LED 가 / , IP
 . TX LED 가 /

[BOOTP Stop]

BOOTP

(6) ping

, HelloDevice IP

ping Command prompt

ping

```
>> ping 192.168.1.15
```

```
>> Pinging 192.168.1.15 with 32 bytes of data:
```

```
Reply from 192.168.1.15: bytes=32 time=10ms TTL=251
```

```
Reply from 192.168.1.15: bytes=32 time<10ms TTL=251
```

```
Reply from 192.168.1.15: bytes=32 time=10ms TTL=251
```

, IP 가

, (4), (5), (6)

(7) [IP Find]

, HelloDevice IP

[IP Find]

4.8

HelloDevice

MAC

, [Find]

, "Found IP"

IP 가



4.8 [IP Find]

IP

(8) HelloDevice

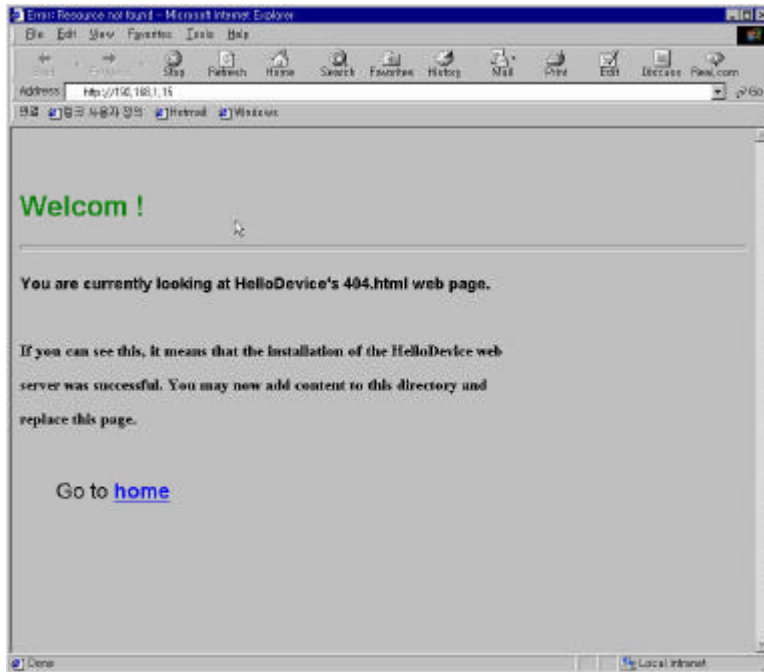
, HelloDevice

404.html

IP

4.9

가



4.9 HelloDevice

4.3.2 IP

IP 192.168.1.15 , IP 192.168.1.18
 IP 192.168.1.100 , IP 0.0.0.0
 가 , IP

(1) IP

IP Clear , PC HelloDevice IP/MAC
 [IP Clear] PC
 ARP , PC ARP
 , PC IP 가 192.168.1.100

>>arp -a

Interface: 192.168.1.100 on Interface 2

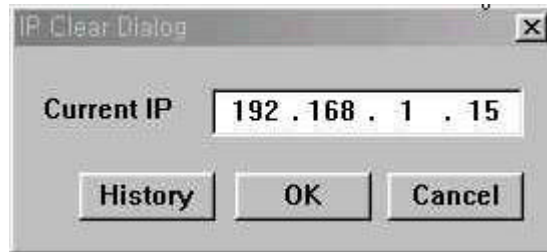
Internet Address	Physical Address	Type
------------------	------------------	------

```
192.168.1.15      00-01-95-04-02-03    dynamic
192.168.1.23     01-a0-11-34-11-0d     dynamic
```

```
HelloDevice IP ARP
>>arp -d 192.168.1.15
```

IP 가 .

```
[IP setup]      [IP clear]      , IP
가      IP      192.168.1.15  0.0.0.0
      IP      , [OK]      , IP      가 192.168.1.15
HelloDevice IP      가 0.0.0.0
```



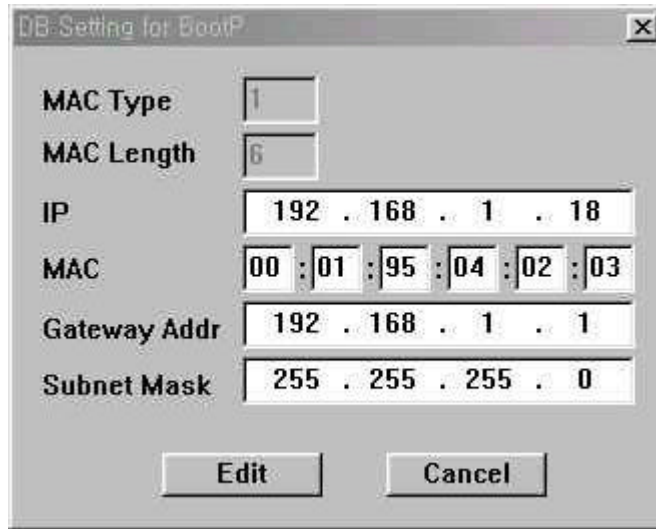
4.10 IP Clear

(2) IP

HelloDevice TX LED 가 . IP 가 , IP
 , HelloDevice TX LED 가 /

(3) IP

IP 192.168.1.18 , IP [Edit] IP
 / , 4.3.1 IP .



4.11 IP

[Edit]

IP

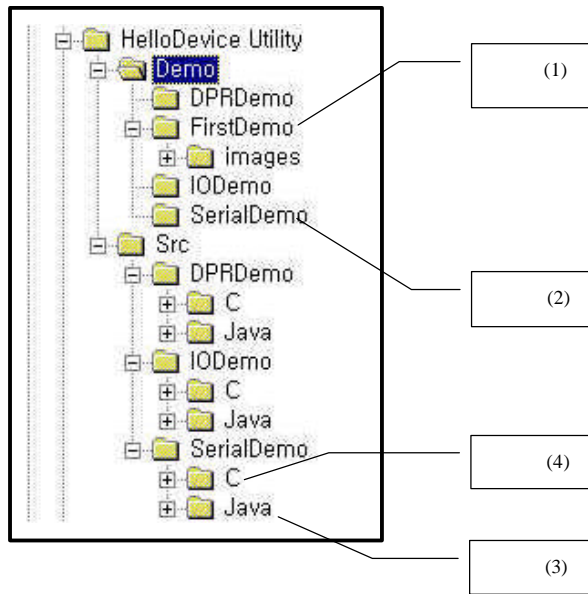
5.

, HelloDevice , HelloDevice
. HelloDevice Start kit

,

- (1)
- (2)
- (3)
- (4) C

5.1. , (1) , 5.2. , (2)
. (3), (4) 6



5.1. HelloDevice

5.1

HelloDevice 가 , HTML , 가
 HelloDevice 256 512 Kbyte 가

HelloDevice , “
 index table” . HelloDevice ,
Build Upload

index table , HelloDevice .
 HelloDevice Build Upload

HelloDevice , .

(1) .
 (2) HelloDevice , HelloDevice

(3) HelloDevice .

(4) , .

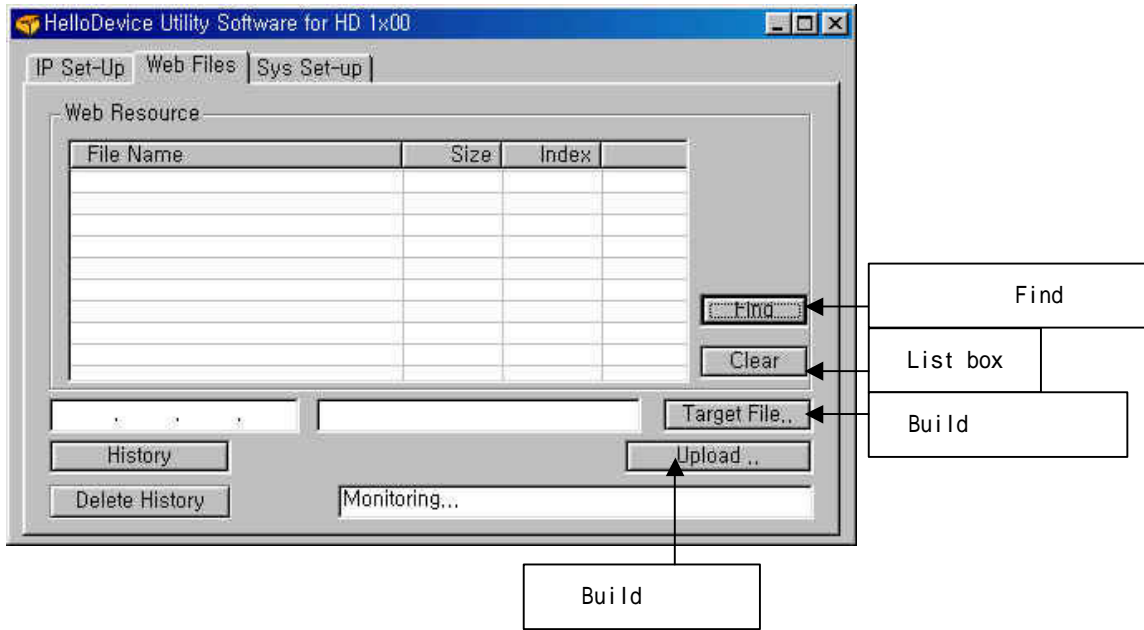
, “FirstDemo” ,

index.html

, HelloDevice

(1) [Web files]

가



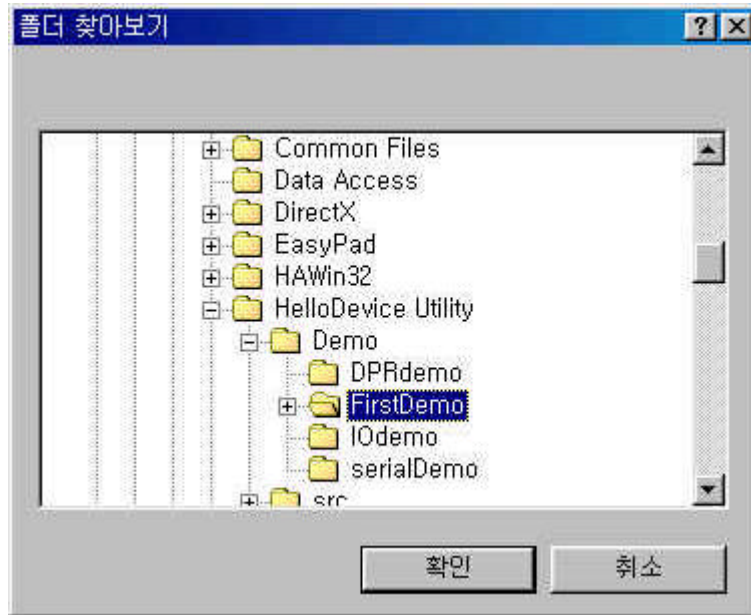
5.2. HelloDevice

(2) [Find]

Build

"FirstDemo"

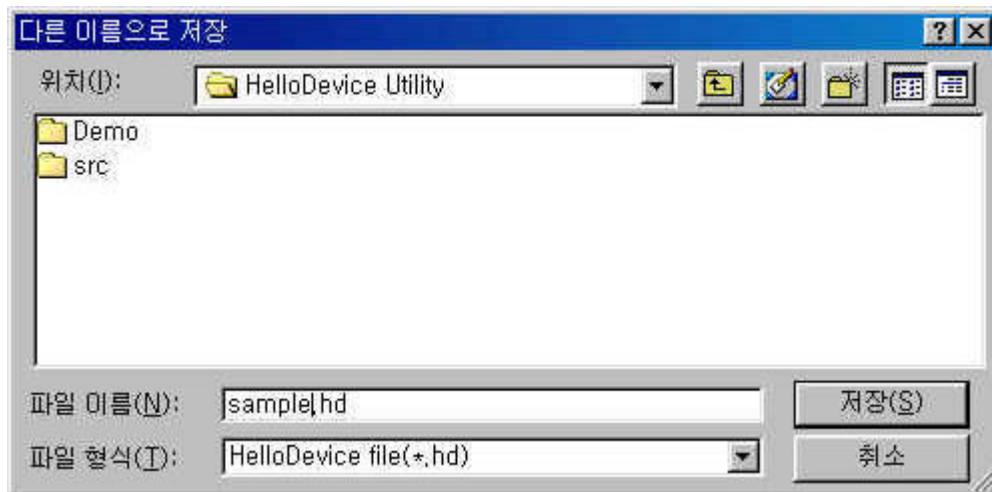
, []



5.3.

(3) Build

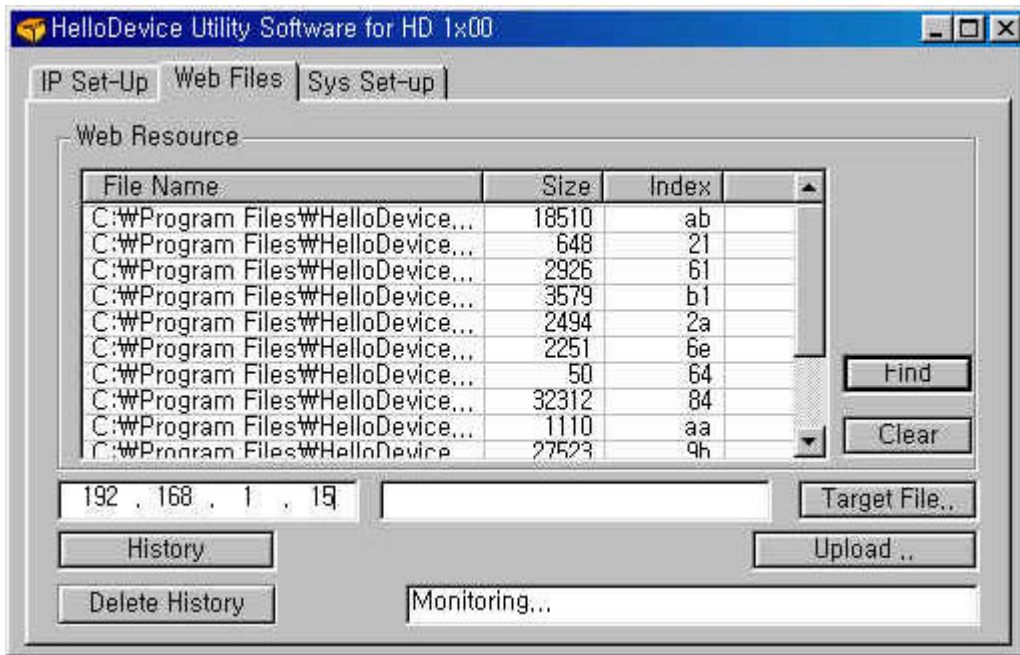
Build HelloDevice *.hd , [] , Build , "Build complete" 가 .



5.4. Build

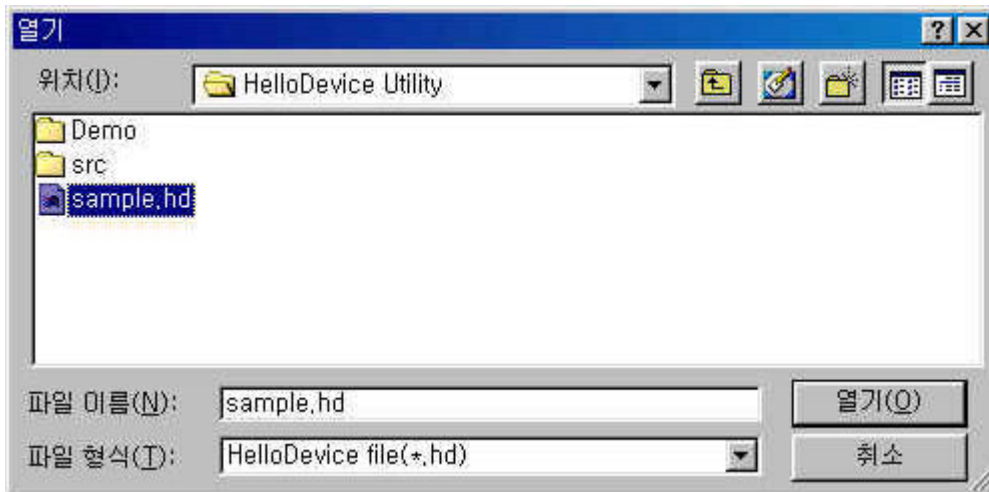
(4) Build

HelloDevice IP .



5.5. Build IP

(5) [Target file..] Build .

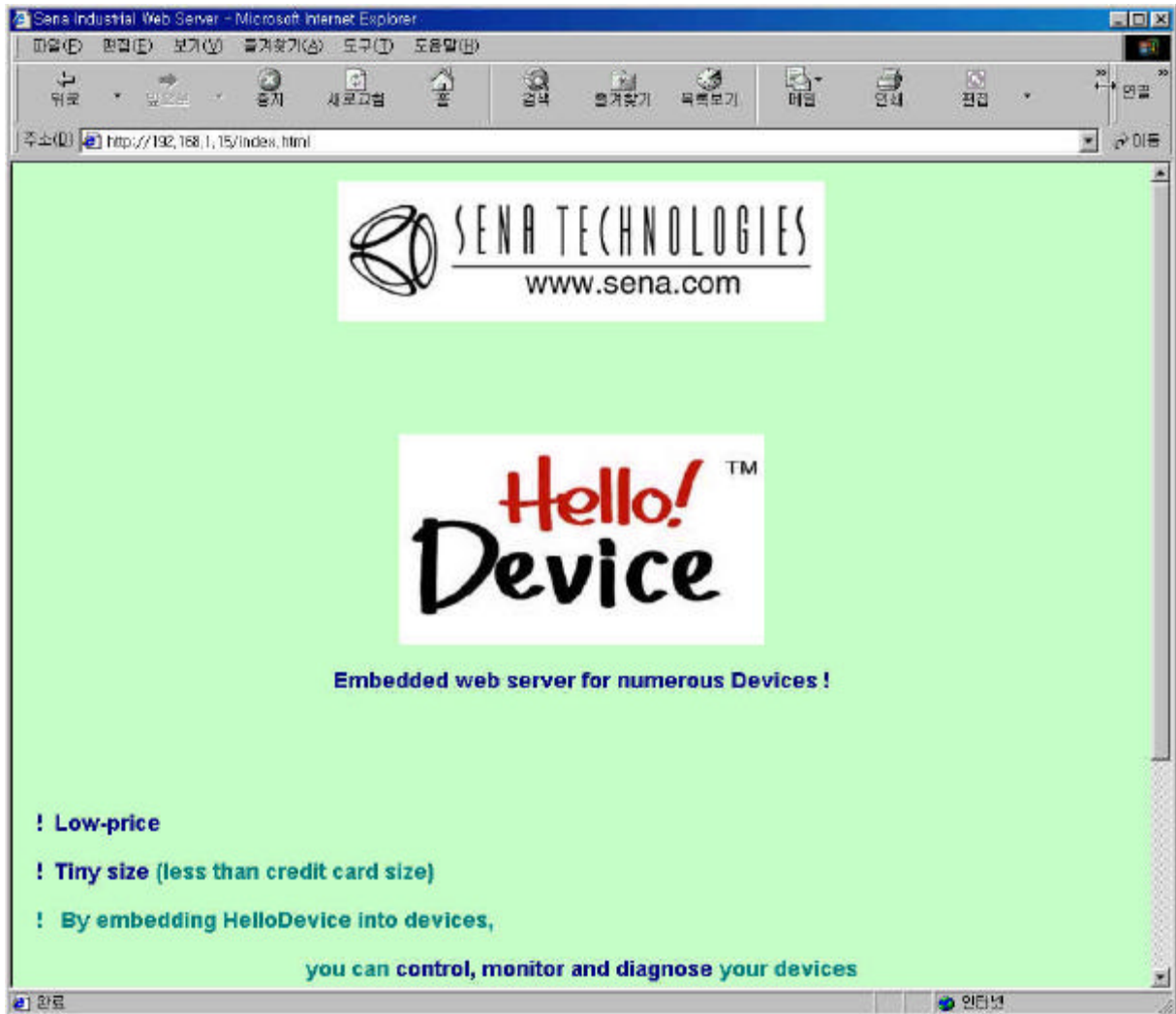


5.6. Build

(6) [Upload] Build HelloDevice .
 Progress bar , "Flash download completed!!"
 가 .

(7) URL <http://192.168.1.15/index.html>

5.7 가 , 가
가 , IP



5.7. HelloDevice, "FirstDemo"

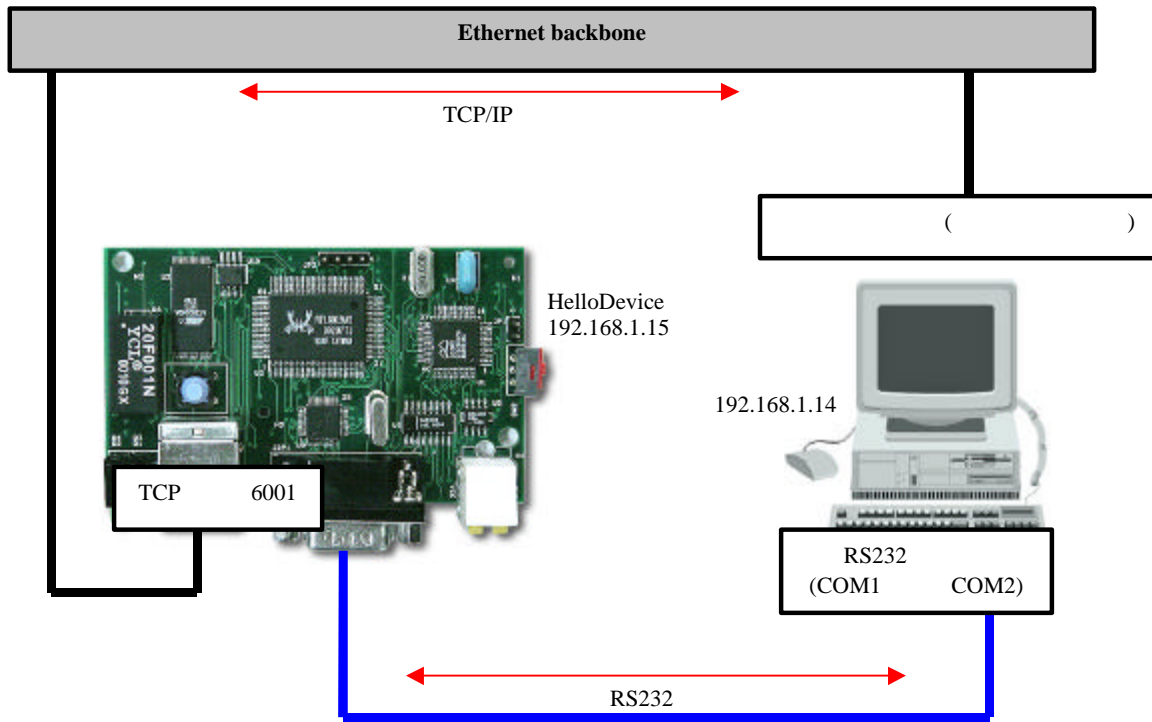
HelloDevice

5.2

HelloDevice 1300 Starter's Kit , HelloDevice
HelloDevice RS232

PC RS232 , PC
 가 TCP/IP HelloDevice
 HelloDevice HelloDevice PC RS232
 PC RS232
 - HelloDevice
 - RS232
 -
 - RS232

5.8



5.8.

5.2.1 HelloDevice

HelloDevice HelloDevice
 HelloDevice , HelloDevice
 [Sys Set-up]

1) [Device] [Serial] .

2)

| **baud rate**

150, 300, 600, 900, 1200, 2000, 2400, 3600, 4800, 7200, 9600, 19200, 38400

| **parity**

None, Even, Odd

| **Data bits**

5, 6, 7, 8 bits

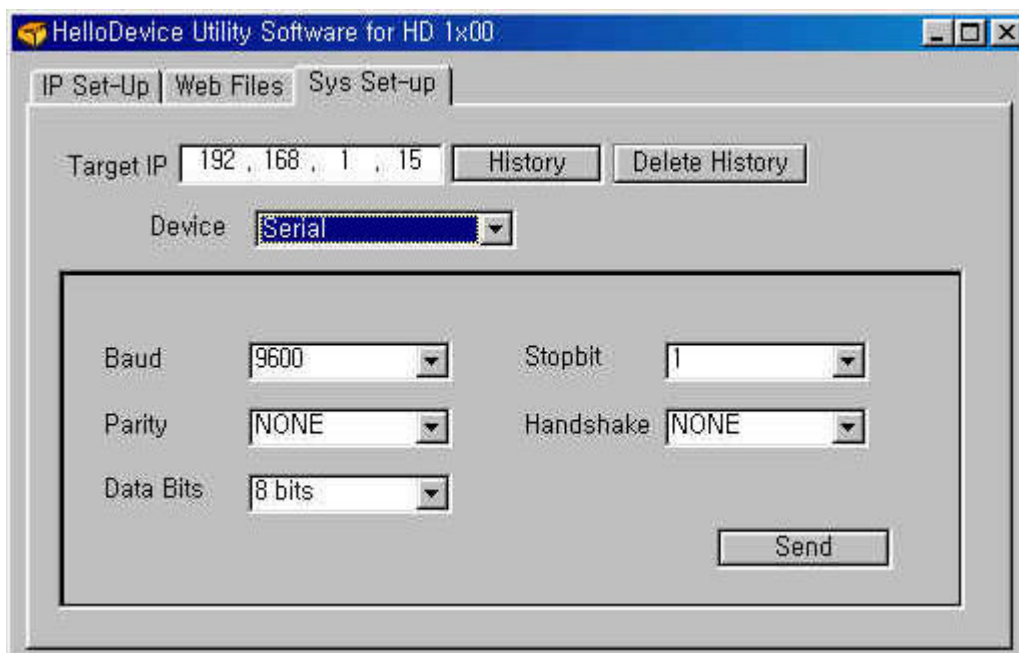
| **Stop bits**

1, 1½ , 2 bit

| **handshake**

None, H/W, X On/Off

, IP 192.168.1.15, 9600 baud rate, Parity None, Data bit 8, Stop bit 1, Handshake None .



5.9

3) [Send] , HelloDevice .

5.2.3

, RS232 HelloDevice "SerialDemo"
 ② . (5.1.)
 index.html, Serial.jar, 404.html .

1) "SerialDemo" index.html .
 index.html IP HelloDevice
 IP ,

```

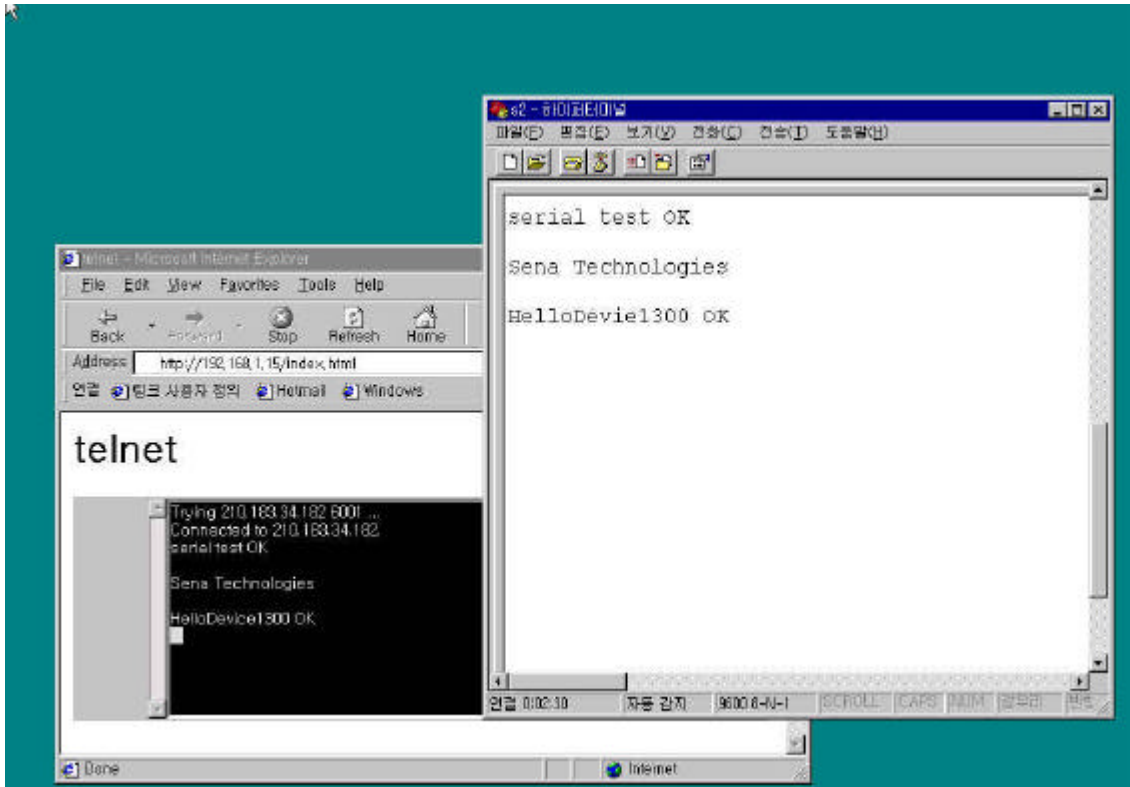
<HTML>
<HEAD>
<TITLE>telnet</TITLE>
</HEAD>
<BODY>
<H1>telnet</H1>
<APPLET CODE=telnet.class ARCHIVE=serial.jar WIDTH=590 HEIGHT=190>
<param name=address value="192.168.1.15">
<param name=port value=6001>
<param name=emulation value=vt320>
<param name=VTcolumns value=40>
<param name=VTrows value=12>
<param name=VTfont value=Courier>
<param name=VTfontsize value=24>
<param name=VTbuffer value=8>
<param name=VTscrollbar value=true>
<param name=VTcharset value=ibm>
</APPLET>
</BODY>
</HTML>
    
```

5.11 RS232 index.html

2) "SerialDemo" [Build] [Upload] .
 5.1 HelloDevice
 , "FirstDemo" "SerialDemo"

3) 가 , <http://192.168.1.15/index.html> .

- 가 2) .
- “Connected to xxx.xxx.xxx.xxx” 가 , index.html IP 가
- , 2) .
- 4) .
- Echo ,
- Echo .



5.12 HelloDevice

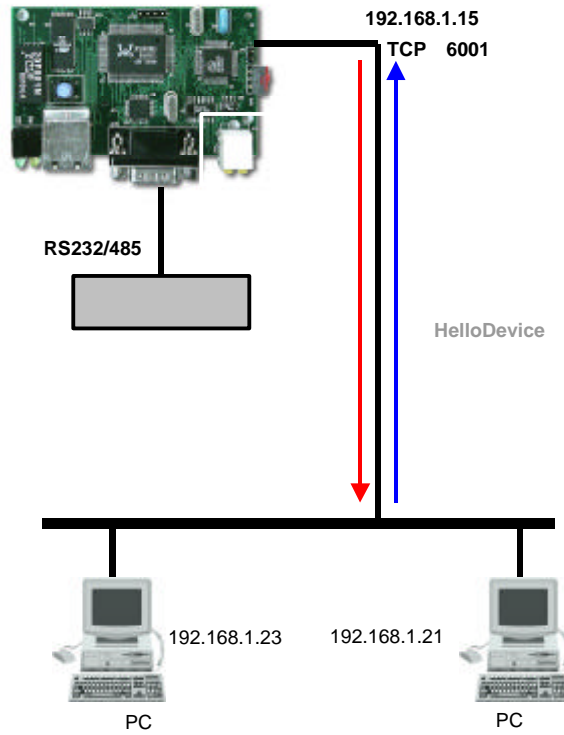
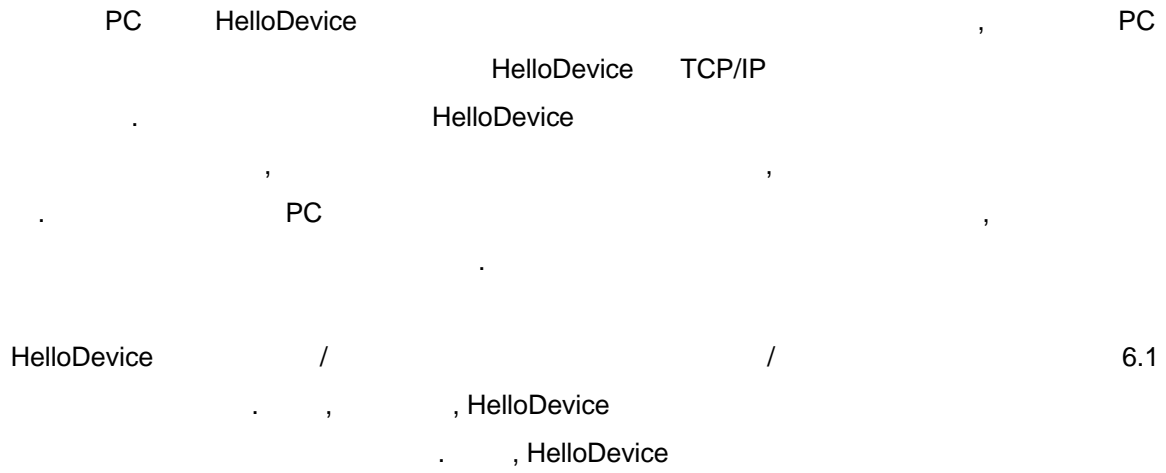
RS-232C Serial 1:1 A HelloDevice

B

Ethernet Serial Data 가 가 8 HelloDevice

TCP .

6.

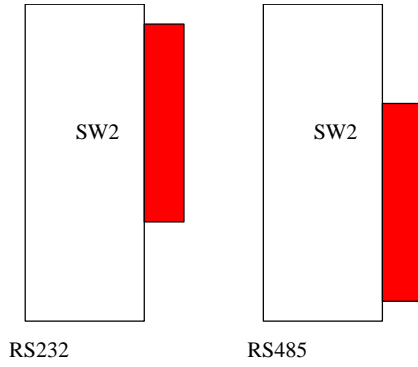


6.1. HelloDevice /

6.1.

HelloDevice , RS232 RS485

6.2 RS232/485



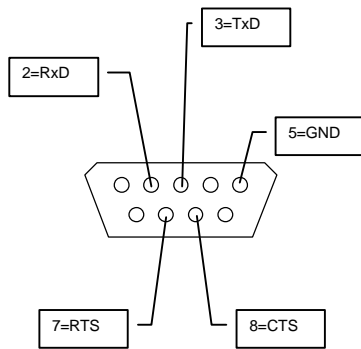
6.2. RS232/485

6.1.1. RS232

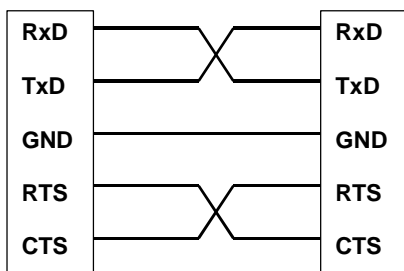
HelloDevice RS232 RxD, TxD, RTS, CTS

6.2 (a), (b) RS232

HelloDevice

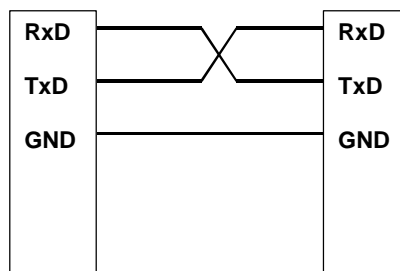


HelloDevice



(a)

HelloDevice



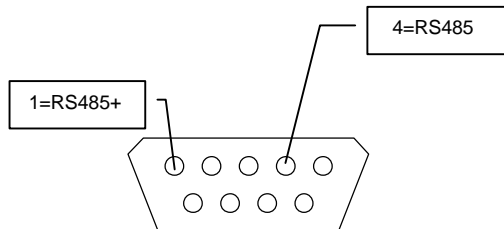
(b)

6.3. RS232

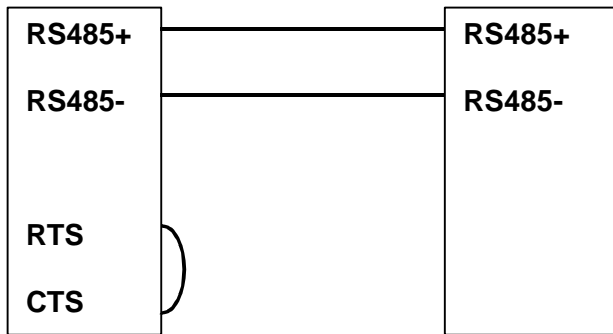
6.1.2. RS485

HelloDevice RS485 RS485+(Pin 1), RS485-(Pin 4)
 , 6.4

HelloDevice



HelloDevice



6.4. RS485

6.2.

, HelloDevice
 가 PC C
 HelloDevice , TCP/IP
 , HelloDevice IP TCP 6001
 HelloDevice HelloDevice

6.2.1

C , HelloDevice TCP 6001
C

"HelloDevice \Src\SerialDemo\C\serialdemo.c"

```
//-----
// Process Serial data send
//-----
void SerialSend()
{
    char commandBuf[512]=" " ;
    int    commandLen ;
    int    err ;

    // Re-Initialize TCP socket
    TCPSocketInit() ;

    // Read serial data
    // : just ASCII string excluding control characters...
    // : Max size is limited to 512 bytes in this demo....
    printf("\nEnter serial data:") ;
    scanf("%s", commandBuf) ;

    // Calc serial data length
    commandLen = strlen(commandBuf) ;

    // Send command to HelloDevice
    err = sendto
        (
            sock,
            &commandBuf,
            commandLen,
            0,
            (struct sockaddr*)&clientAddr,
            sizeof(clientAddr)
        ) ;
    if (err == -1 )
    {
        perror("\nsend error\n");
        exit (1);
    }
}
```

6.2.2.

[socket], [display] , HelloDevice , Public domain Free "telnet"
CDROM "1300_telnet_documentation"

Appendix A.

(cross-over)

IP

HelloDevice IP
(:
192.167.1.23

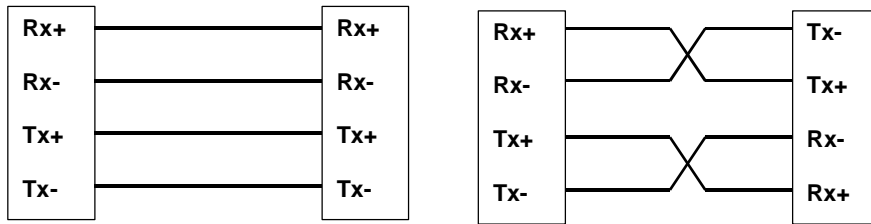
172.168.1.xxx
) , PC

, HelloDevice IP
HelloDevice

Rx-Rx, Tx-Tx

(Straight)

, Rx-Tx, Tx-Rx



PC HelloDevice

, 가

IP

HelloDevice

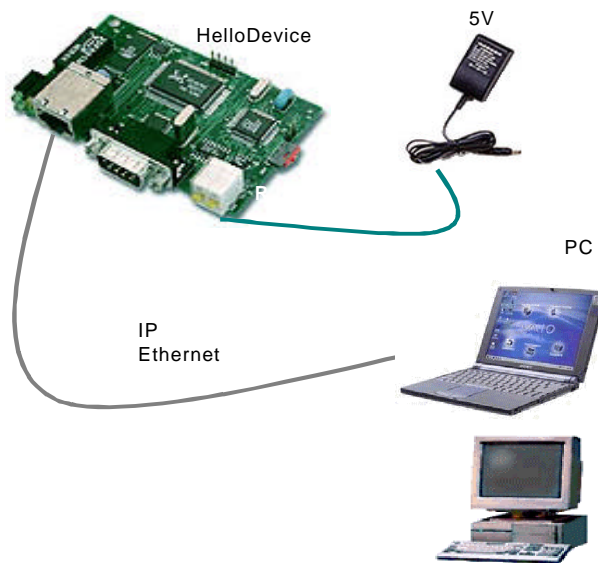
1)

가

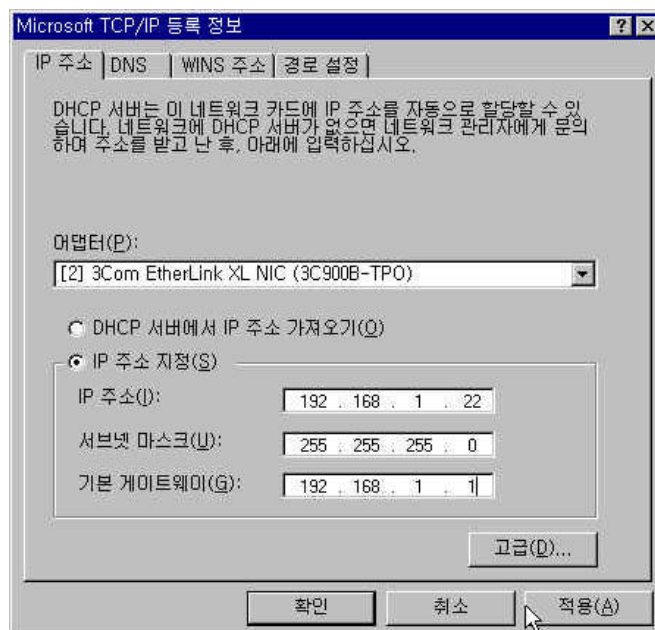
PC

2) HelloDevice

PC



- 3) , 1:1 , PC HelloDevice
 TCP/IP
 IP Gateway HelloDevice
) HelloDevice IP 가 192.168.1.23 , PC IP 가
 172.168.1.22, 가 255.255.255.0 , PC TCP/IP
 HelloDevice IP 가 1 가
 192.168.1.22 [] , IP 가
 192.168.1.23 HelloDevice ,
 IP .



- 4) , ping ,

```
>> ping 192.168.1.23
>> Pinging 192.168.1.23 with 32 bytes of data:
    Reply from 192.168.1.23: bytes=32 time=10ms TTL=251
    Reply from 192.168.1.23: bytes=32 time<10ms TTL=251
    Reply from 192.168.1.23: bytes=32 time=10ms TTL=251
```

- 5) HelloDevice

6) 4.3.2 , IP

, IP

.