Overview

This application note shows you how to use the NetMedia SitePlayer Serial Redirector to connect to a SitePlayer Telnet Device which is connected to a Dallas Serial Port iButton Holder. This allows you to access Dallas iButton devices through the network. We assume that you are familiar with using the Serial Port iButton Holder when it is connected directly to the serial port of a computer.

The Serial Port iButton Holder performs RS232-level conversion and actively generates the 1-Wire communication signals. Together with adequate software, it enables a computer to directly read and write any non-EPROM iButton devices. All these read and write operations are implemented by using overlapped asynchronous I/O and wait APIs.

Using Serial Port iButton Holder over the Internet

The SitePlayer Serial Redirector makes the Serial Port iButton Holder a network enabled device. This is accomplished by adding a TCP/IP link to an existing serial connection. The TCP/IP link increases the time that it takes for packets to travel back and forth from a computer to the iButton. This increased time overlaps the timeout used in the iButton software and sometimes also breaks packets in two or more chunks. The procedure below explains how to get around this increased timing and allows you to use the iButton in a network environment:

1. Download and unzipped *uWin32VC300.zip* from the Maxim/Dallas website.

2. Change attributes of the folder *uWin32VC300* (located in folder where you downloaded *uWin32VC300.zip*) by clearing the "Read-only" box . Folder *uWin32VC300*.

3. Start Visual Studio 6.0. Do not use any flavor of Visual Studio .NET.

4. In Visual Studio click *File->Open Workspace* and browse to open *\uWin32VC300\uWin32VC\uWin32VC.dsw* located in the folder where *uWin32VC300.zip* was unzipped.

5. In Visual Studio click *Build->Rebuild All*.

6. In Visual Studio click *Project->Set Active Project ->humalog*.

7. In Visual Studio click *Build-> Build humalog.exe*.

8. In Visual Studio click *Project->Settings* and select the *Debug* tab. Under *Program arguments* type *com1* and press *OK*.

9. Connect the iButton holder to serial port *COM1* of the local computer.

10. Click *Build->Execute Humalog.exe*. This will start a command line program that allows communications with iButton. After verifying that iButton is functional select "quit" from menu and proceed farther.

```
"C:\download\Ibutton\uWin32VC300\applnote_002\uWin32VC300\Release\humalog.exe" com1

1-Wire Memory utility console application Version 0.01
Device Selection
(0) 6B 00 00 00 01 A8 0E 41
0

Bank Operation Menu
(0)  Start new mission.
(1)  Stop mission.
(2)  Download mission data.
(3)  Read the temperature.
(4)  Read the humidity or voltage.
(5)  Set Bus Master read only password.
(6)  Set Bus Master read/write password.
(7)  Set device read only password.
(8)  Set device read/write password.
(9)  Enable the password.
(10) Disable the password.
(11) Quit.

Please enter value:
```

11. In *ClassView* expand node *humalog classes*.

12. In *ClassView* under node *humalog classes* expand node *Clobals*.

13. In *ClassView* under expanded node *Clobals* select *ReadCOM* and select *Go to Definition*.

14. In the body of function `int` `ReadCOM(int portnum, int inlen, uchar *inbuf)` change the statement

```
        WaitForSingleObject(osRead[portnum].hEvent,to);
```
to
```
        WaitForSingleObject(osRead[portnum].hEvent,to*100);
```

15. In ClassView under expanded node *Clobals* select *WriteCOM* and select *Go to Definition*.

16. In the body of function `SMALLINT WriteCOM(int portnum, int outlen, uchar *outbuf)` change statement

```
        WaitForSingleObject(osWrite[portnum].hEvent,to);
```
to
```
        WaitForSingleObject(osWrite[portnum].hEvent,to*100);
```

17. In ClassView under expanded node *Clobals* select *owAcquireEx* and select *Go to Definition*.

18. In the body of function `int owAcquireEx(char *port_zstr)` change statement

```
        if (!DS2480Detect(portnum))
        {
                CloseCOM(portnum);
                OWERROR(OWERROR_DS2480_NOT_DETECTED);
                return -1;
        }
```
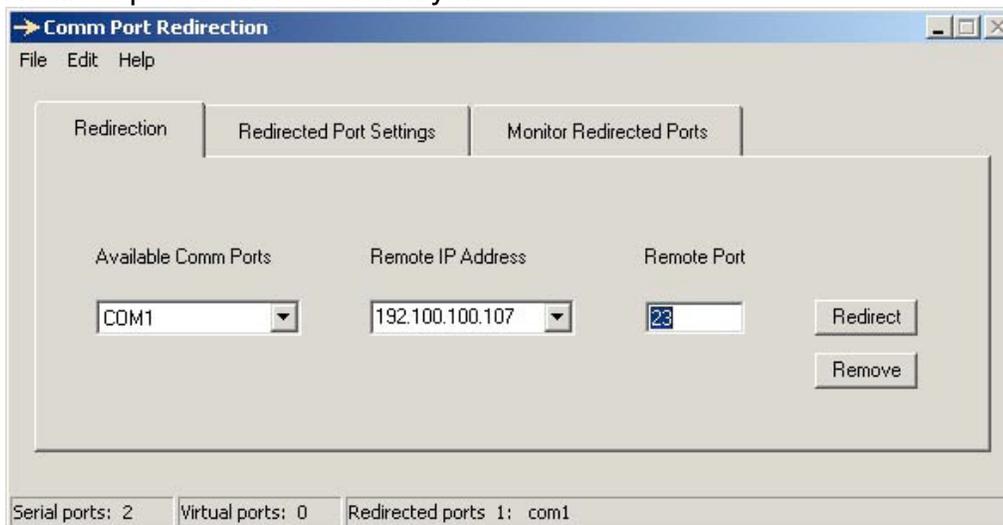to
```
        /*
        if (!DS2480Detect(portnum))
        {
                CloseCOM(portnum);
                OWERROR(OWERROR_DS2480_NOT_DETECTED);
                return -1;
        }
        */
```
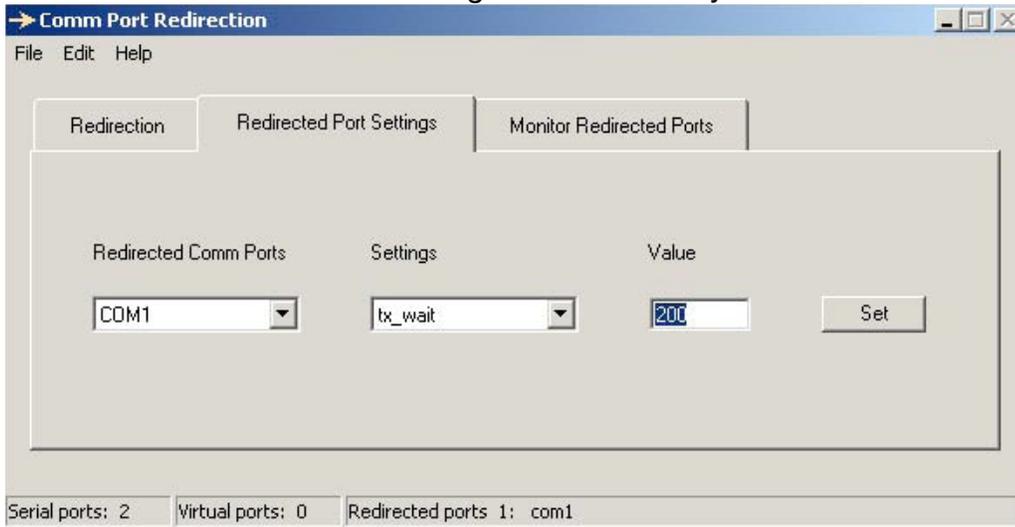
19. Build *humalog.exe*.

20. Start SitePlayer Redirector using shortcut *SitePlayer Serial Redirector* or *Start->Program->SitePlayer Redirector*.

21. Redirect port *COM1* to SitePlayer.

22. Select tab *Redirected Port Settings* and set a delay value.

23. Connect iButton holder to serial port of SitePlayer.

24. Click *Build->Execute Humalog.exe*. This will start a command line program that connects to the iButton through the network.

Remarks

- Please note that step 18 is valid only for network connections. When using local connections, restore the body of function `owAcquireEx()` to its original contents.

- If you would like to use the same executable (*humalog.exe*) both for local and network connections, you can modify the program as follows:

1. Open file *omnet.h*

   1.1.   Add variables:
```
int rxDelay;
int txDelay;
int isLocal;
```

2. Go to definition of main(...) in file *humalog.c*

   2.1.   Change
```
if (argc != 2)
```
       to
```
if (argc < 2)
```

   2.2.   After statement
```
printf("\n1-Wire Memory utility console application Version 0.01\n");
```
       add
```
if ( argc == 4 && atoi(argv[2]) > 0 && atoi(argv[3]) > 0 )
{
        rxDelay = atoi(argv[2]);
        txDelay = atoi(argv[3]);
        isLocal = 0;
}
else
{
        rxDelay = 1;
        txDelay = 1;
        isLocal = 1;
}
```

3. Go to definition `ReadCOM(...)`

3.1. After statement

```
DWORD ler=0,to;
```

add

```
if ( rxDelay <= 0 )
        rxDelay = 1;
```

3.2. Change statement

```
WaitForSingleObject(osRead[portnum].hEvent,to);
```

to

```
WaitForSingleObject(osRead[portnum].hEvent,to*rxDelay);
```

4. Go to definition `WriteCOM(...)`

4.1. After statement

```
DWORD ler=0,to;
```

add

```
if ( txDelay <= 0 )
        txDelay = 1;
```

4.2. Change statement

```
WaitForSingleObject(osWrite[portnum].hEvent,to);
```

to

```
WaitForSingleObject(osWrite[portnum].hEvent,to*txDelay);
```

5. Go to definition `owAcquireEx(...)`

5.1. Change statement

```
// detect DS2480
if (!DS2480Detect(portnum))
{
        CloseCOM(portnum);
        OWERROR(OWERROR_DS2480_NOT_DETECTED);
        return -1;
}
```

to

```
if ( isLocal != 0 )
{
        // detect DS2480
        if (!DS2480Detect(portnum))
        {
                CloseCOM(portnum);
                OWERROR(OWERROR_DS2480_NOT_DETECTED);
                return -1;
        }
}
```

6. Build all.

7. Usage

7.1. Local mode (iButton holder connected to serial port of computer)

humalog.exe [portNum]

example: `humalog com1`

7.2. Network mode (iButton holder connected to serial port of SitePlayer)

humalog.exe [portNum] [rxDelay] [txDelay]

example: `humalog.exe com1 100 100`