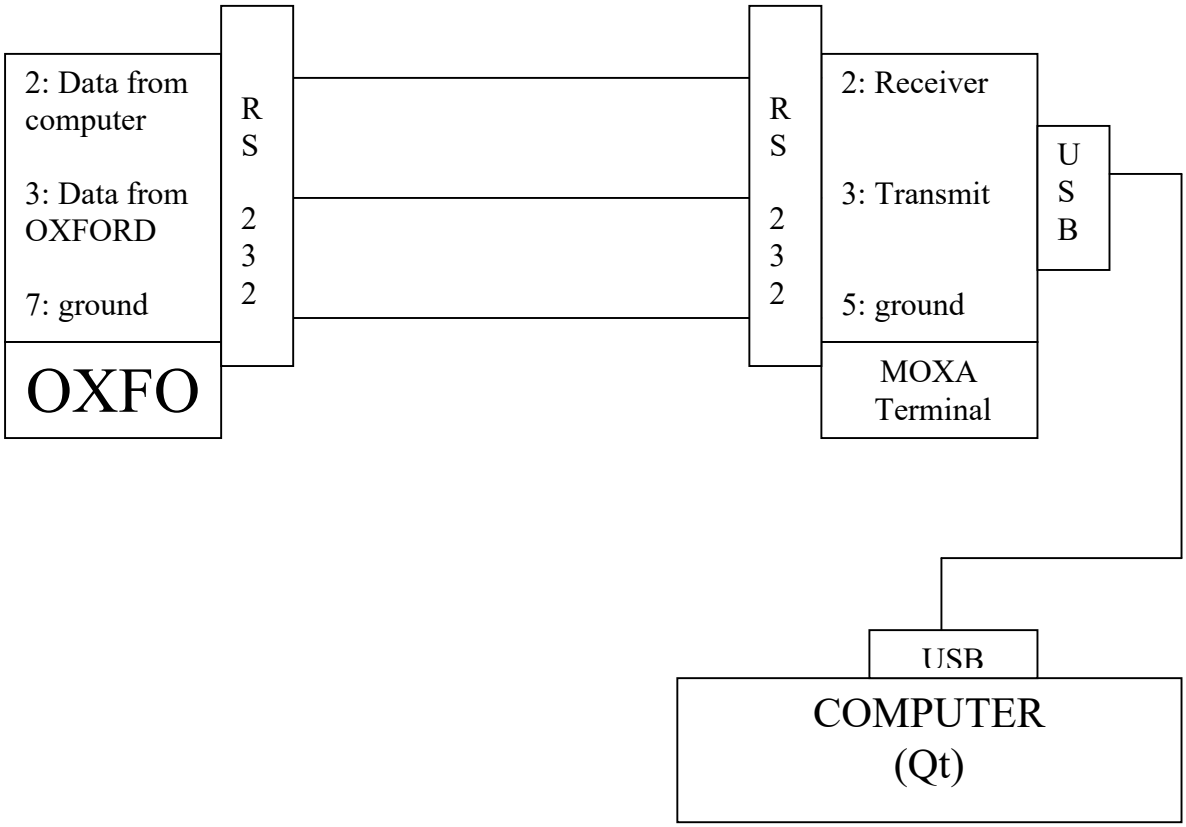
Interfacing OXFORD instrument in VisualBasic.net 2008

RS 232 communication

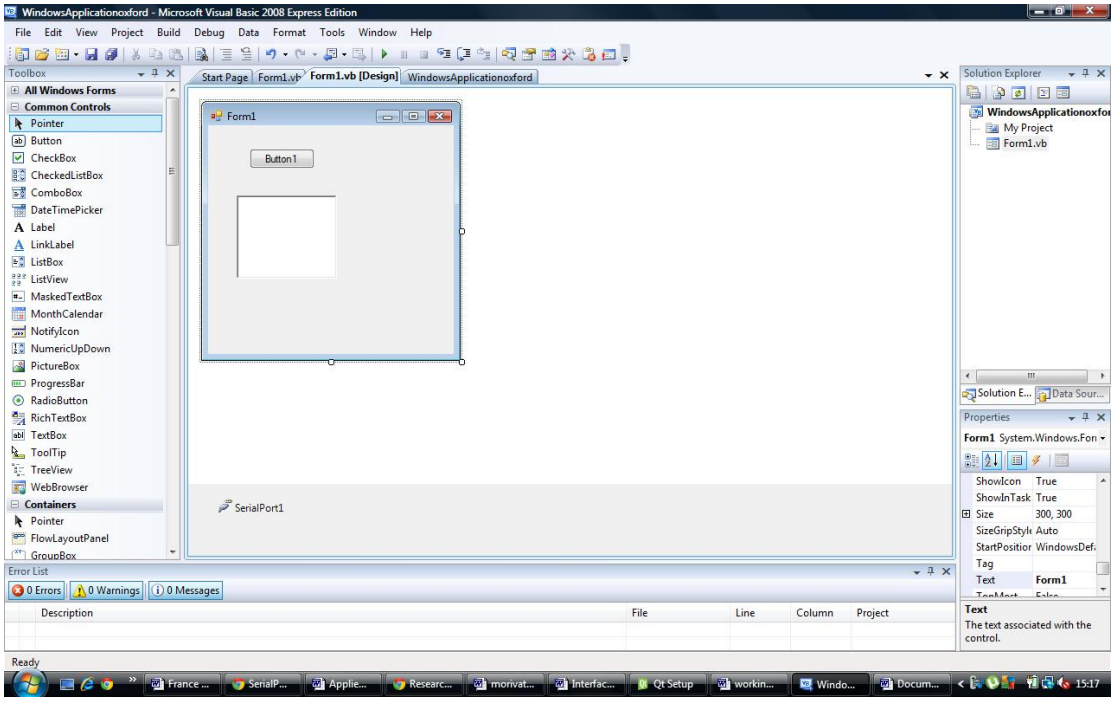
We used a MOXA RS 232 to USB converter for connecting OXFORD temperature sensor to the computer.

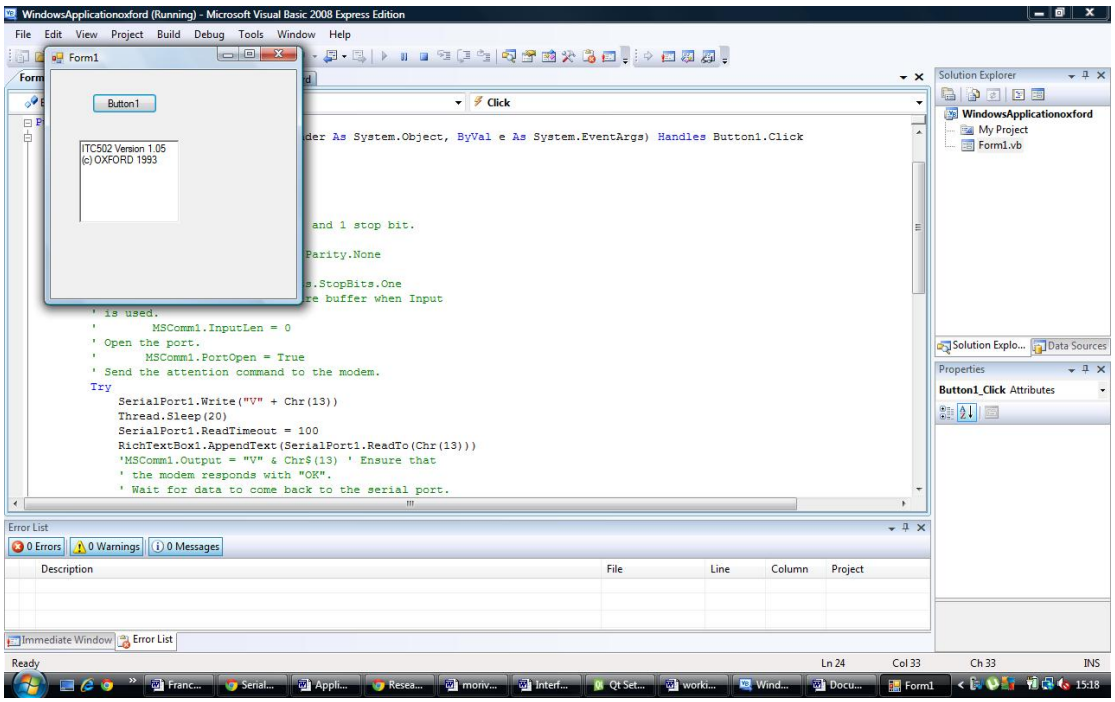


Once the above physical layer is developed, we install the Moxa driver to create a serial COM port in the computer.

Once the MoxaCOM port is created, we test the working of device using teraterm. Set the device parameters as 9600, N, 8, 1. Enable the local echo. Send a sample command like ‘V’ to check the connectivity.

```
Imports System
Imports System.IO.Ports
Imports System.Threading

Public Class Form1
    Private Sub Button1_Click(ByVal sender As System.Object, ByVal e
As System.EventArgs) Handles Button1.Click


        SerialPort1.Open()


        ' 9600 baud, no parity, 8 data, and 1 stop bit.
        'SerialPort1.BaudRate = 9600
        'SerialPort1.Parity = IO.Ports.Parity.None
        'SerialPort1.DataBits = 8
        'SerialPort1.StopBits = IO.Ports.StopBits.One
        ' Tell the control to read entire buffer when Input
        ' is used.
        '        MSComm1.InputLen = 0
        ' Open the port.
        '       MSComm1.PortOpen = True
        ' Send the attention command to the modem.
        Try
            SerialPort1.Write("X" + Chr(13))
            Thread.Sleep(20)
            SerialPort1.ReadTimeout = 100
            RichTextBox1.AppendText(SerialPort1.ReadTo(Chr(13)))
            'MSComm1.Output = "V" & Chr$(13) ' Ensure that
            ' the modem responds with "OK".
            ' Wait for data to come back to the serial port.
        Catch ex As TimeoutException
            RichTextBox1.AppendText("no data")
        End Try


        SerialPort1.Close()
    End Sub

End Class
```


WindowsApplicationoxford - Microsoft Visual Basic 2008 Express Edition
File Edit View Project Build Debug Data Format Tools Window Help
Toolbox
All Windows Forms
Common Controls
Pointer
Button
CheckBox
CheckedListBox
ComboBox
DateTimePicker
Label
LinkLabel
ListBox
ListView
MaskedTextBox
MonthCalendar
NotifyIcon
NumericUpDown
PictureBox
ProgressBar
RadioButton
RichTextBox
TextBox
ToolTip
TreeView
WebBrowser
Containers
Pointer
FlowLayoutPanel
GroupBox
Start Page
Form1.vb
Form1.vb [Design]
WindowsApplicationoxford
Form1
Button1
SerialPort1
Solution Explorer
WindowsApplicationoxfor
My Project
Form1.vb
Properties
Form1 System.Windows.Fon
ShowIcon True
ShowInTask True
Size 300, 300
SizeGripStyl Auto
StartPositior WindowsDef
Tag
Text Form1
Text
The text associated with the control.
Error List
0 Errors
0 Warnings
0 Messages
Description
File
Line
Column
Project
Ready


WindowsApplicationoxford (Running) - Microsoft Visual Basic 2008 Express Edition
File Edit View Project Build Debug Tools Window Help
Form1
Button1
ITC502 Version 1.05
(c) OXFORD 1993
Click
der As System.Object, ByVal e As System.EventArgs) Handles Button1.Click
and 1 stop bit.
Parity.None
s.StopBits.One
re buffer when Input
' is used.
' MSComm1.InputLen = 0
' Open the port.
' MSComm1.PortOpen = True
' Send the attention command to the modem.
Try
SerialPort1.Write("V" + Chr(13))
Thread.Sleep(20)
SerialPort1.ReadTimeout = 100
RichTextBox1.AppendText(SerialPort1.ReadTo(Chr(13)))
'MSComm1.Output = "V" & Chr$(13) ' Ensure that
' the modem responds with "OK".
' Wait for data to come back to the serial port.
Solution Explorer
WindowsApplicationoxford
My Project
Form1.vb
Properties
Button1_Click Attributes
Error List
0 Errors
0 Warnings
0 Messages
Description
File
Line
Column
Project
Immediate Window
Error List
Ready
Ln 24
Col 33
Ch 33
INS

Steps for interfacing OXFORD temperature sensor in VisualBasic.net 2008 are as follows:

1. Start a new project
2. Create a new Button
3. Create a new RichTextBox to show the output.
4. Create a new serial port
5. Set the parameters of the port manually (or can be set programmatically)
6. Now inside the function (callback) of the button, open the serial port using SerialPort1.Open() where serialport1 is the name of serialport created
7. Include the following header files `Imports System`, `Imports System.IO.Ports`, `Imports System.Threading`.
8. Put a try catch block, so as to check the connectivity is always on. If there is no connectivity, no data will come in the textbox.

9. SerialPort1.Write("V" + Chr(13)), use this command to write a data, (send command) to the temperature sensor device.
   Chr(13) = Carriage Return - (moves cursor to lefttmost side) , \r
   Chr(10) = New Line (drops cursor down one line) , \n
10. Thread.Sleep(20) is given for waiting 20 ms for command to be sent
11. SerialPort1.ReadTimeout = 100 , set RS 232 read timeout to 100 ms.
    ReadTimeout Gets or sets the number of milliseconds before a time-out occurs when a read operation does not finish. It Gets or sets a value, in miliseconds, that determines how long the stream will attempt to read before timing out.
12. RichTextBox1.AppendText(SerialPort1.ReadTo(Chr(13))), Read data from RS 232 Input Buffer up to the next CR (CHR(13))
13. Timeout exception is thrown when time allotted for a process or operation has expired.
14. SerialPort1.Close(), Close the serial port.