Creating a Web Based DM1800 Application

This application note will show you how to use the DMWEB.DLL to allow you to make a web based ASP web page(s) for your custom application. The DMWEB.DLL allows you to use all the features of the DM1800 without having to write a large program. It also enables you to quickly modify your custom web page for other applications without having to rewrite a large program.

ASP is a script based HTML web page language. It will run on any server locally including being able to run on an Internet Information Services (IIS) which allow you to turn any Windows based PC running XP Pro into an internet server. We will discuss how to set your XP PC up to use this feature later in this application note.

The DMWEB.DLL consists of 32 object commands that will allow you the user to communicate to the DM1800 Base and Field Nodes easily including opening and closing the communications comm. port.

The following is a list of the DMWEB.DLL commands and a brief description of there function.

Communication Commands

Command	Description
CloseCom(n)	Closes active com port, n is don't care
OpenCom(n)	Opens Com port n, valid port number 1-8
ComStat(n)	Returns status of com port, n is don't care

Counter Commands

Command	Description
Config_Count_Both(n)	Set counter to increment on both edges, n = node
Config_Count_Dn(n)	Set counter to increment on falling edge, n = node
Config_Count_Up(n)	Set counter to increment on rising edge, n = node

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Binary Input Event Commands

Command	Description
Config_Event_Both(n)	Set counter to send a message to the base on both edges, n = node number
Config_Event_Dn(n)	Set counter to send a message to the base on falling edge, n = node number
Config_Event_Up(n)	Set counter to send a message to the base on rising edge, n = node number

Uart Event Commands

Command	Description
Config_Uart_Event_1200(n)	Set Node(n) Uart to 1200 bps and enable event message to base on receipt of data present at Uart
Config_Uart_Event_2400(n)	Set Node(n) Uart to 2400 bps and enable event message to base on receipt of data present at Uart
Config_Uart_Event_4800(n)	Set Node(n) Uart to 4800 bps and enable event message to base on receipt of data present at Uart
Config_Uart_Event_9600(n)	Set Node(n) Uart to 9600 bps and enable event message to base on receipt of data present at Uart

Uart Commands

Command	Description
Config_Uart_1200NE(n)	Set Node(n) Uart to 1200 bps, n = node number
Config_Uart_2400NE(n)	Set Node(n) Uart to 2400 bps, n = node number
Config_Uart_4800NE(n)	Set Node(n) Uart to 4800 bps, n = node number
Config_Uart_9600NE(n)	Set Node(n) Uart to 9600 bps, n = node number

A/D Commands

Command	Description
Read_AD_8Bit(n)	Read the A/D converter on node n, with A/D resolution of **8 bits**, data will be received by a Read_Com(n) command
Read_AD_10Bit(n)	Read the A/D converter on node n, with A/D resolution of **10 bits**, data will be received by a Read_Com(n) command

Binary Input Command

Command	Description
Read_Binary_In(n)	Read binary input pin and report logic state of node(n), data will be received by a Read_Com(n) command, n = node number

Binary Output Commands

Command	Description
Read_Binary_Out(n)	Read binary output pin and report logic state of node(n) data will be received by a Read_Com(n) command, n = node number
Set_Binary_On(n)	Set the binary output pin High on node n
Set_Binary_Off(n)	Set the binary output pin Low on node n
Set_Binary_Default_Hi(n)	Set power on **default** binary output High for node(n)
Set_Binary_Default_Low(n)	Set power on **default** binary output Low for node(n)

Read Com Commands

Command	Description
Read_Com(n)	Read Com port data, n = don't care

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User Data Commands

Command	Description
Set_User_A(n,s)	Set user data register A on node n with data string in **s**, **max** length is 16 bytes
Set_User_B(n,s)	Set user data register B on node n with data string in **s**, **max** length is 16 bytes
Read_User_A(n)	Read user data register A on node n, data will be received by a Read_Com(n) command
Read_User_B(n)	Read user data register B on node n, data will be received by a Read_Com(n) command

System Commands

Command	Description
Reset_Node(n)	Reset Node n
Reset_Base(n)	Reset Base, n = don't care

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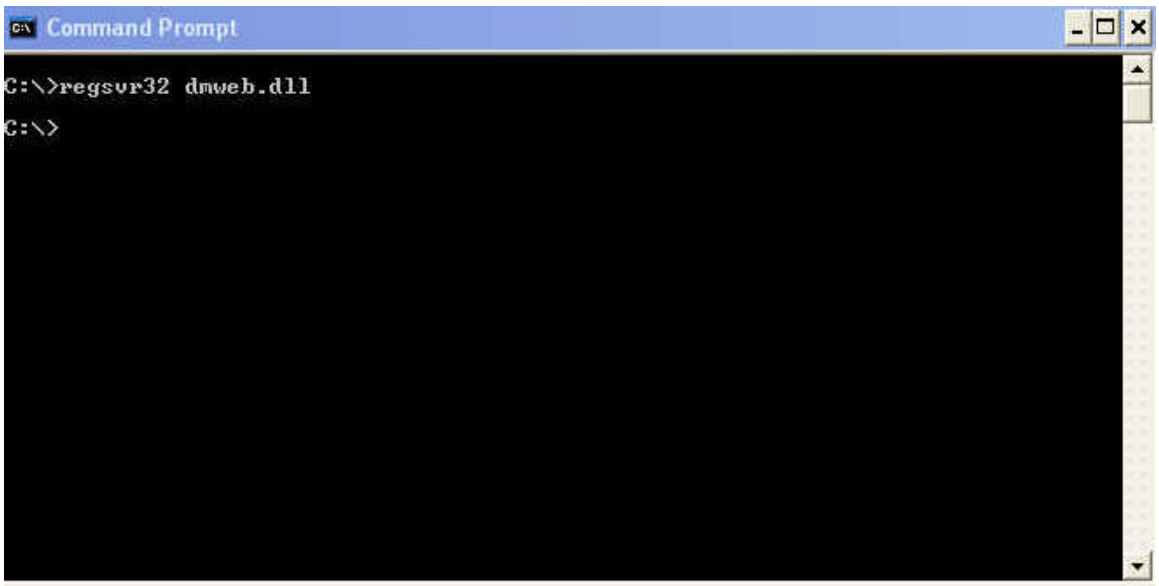
Starting DMWEB.DLL

You will have to run "Regsvr32 DMWEB.DLL" from a DOS window only once.
Example:
Open a DOS window change to the directory you placed DMWEB.DLL and enter Regsvr32 dmweb.dll



Followed by this window:

Click OK and exit the DOS window.

You may now run any of the dmweb.dll commands from an ASP web page.

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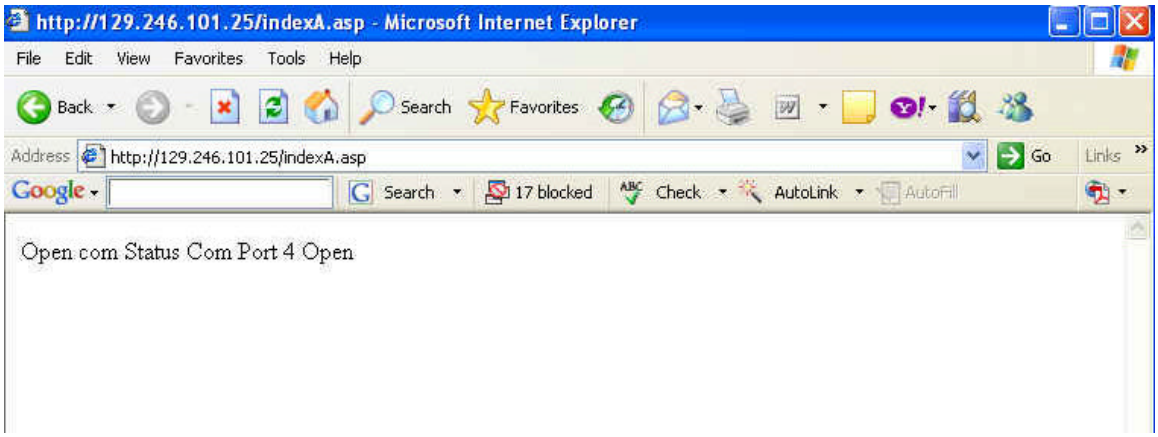
ASP Open Com Port Example

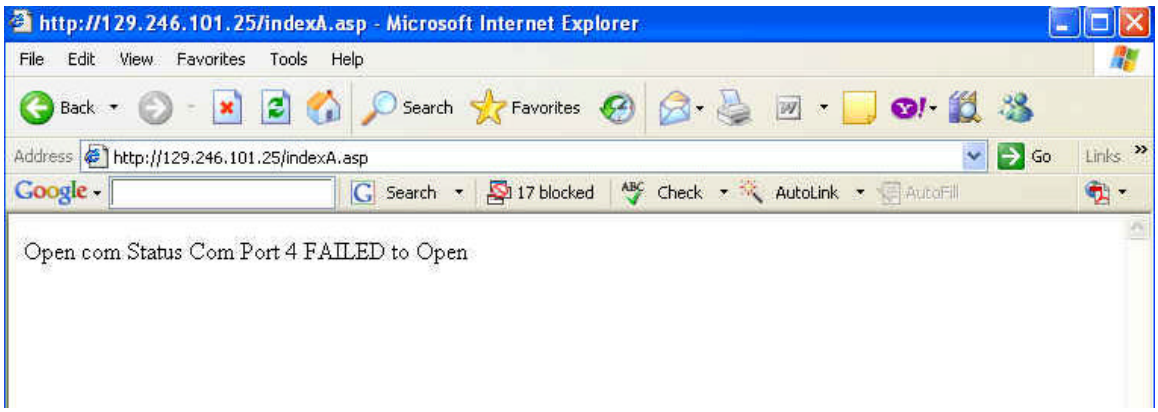
```
<html>
<head>
</head>
<body>

<%
' Declaring variable
Dim sd1
' Creating instance of our Component
Set sd1 = Server.CreateObject("dmweb.OpenCom")
Response.Write "Open com Status " & sd1.OpenCom(4)    '← open com port 4
Set sd = Nothing
%>
```

Running the above web page will result is a display of:



If successful, else would look like;



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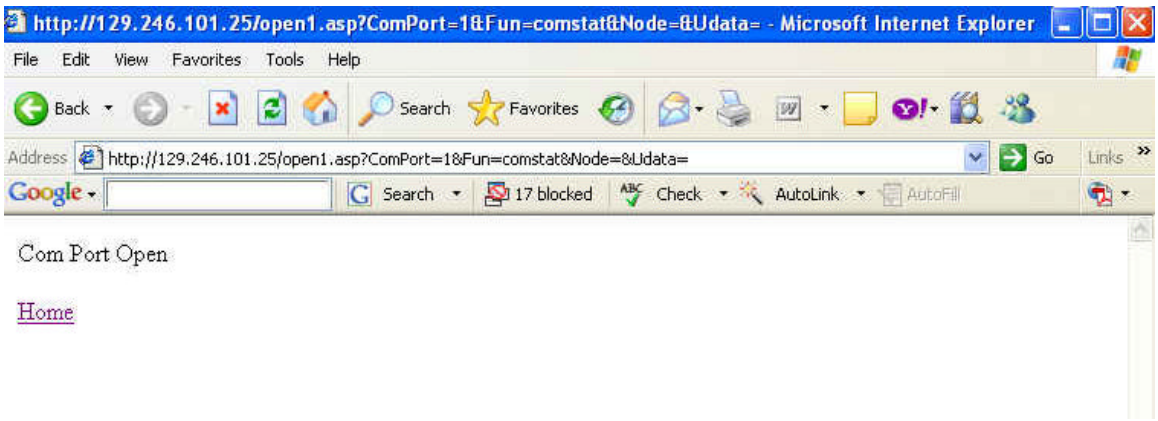
ASP Status Com Port Example

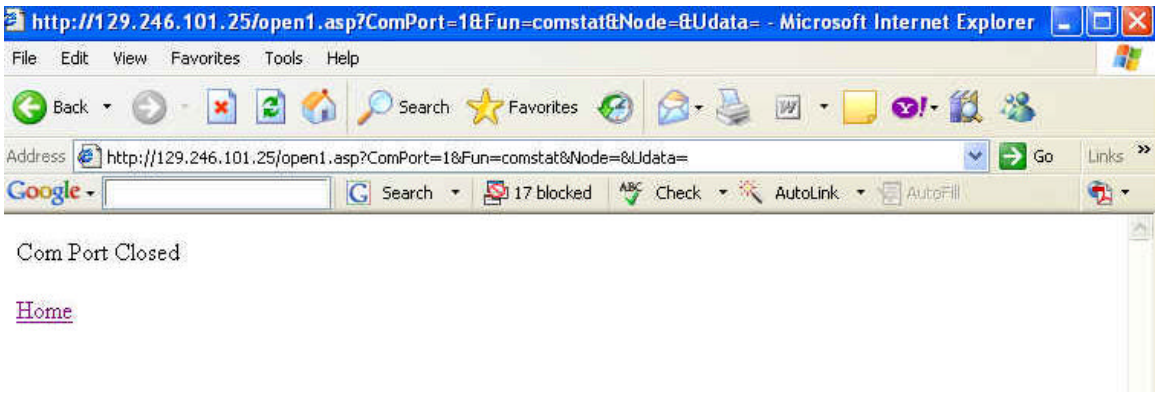
```
<html>
<head>
</head>
<body>

<%
' Declaring variable
Dim sd1
' Creating instance of our Component
Set sd1 = Server.CreateObject("dmweb.ComStat")
Response.Write "Com Status " & sd1.ComStat(4)    '← n(4) is don't care
Set sd = Nothing
%>
```

Running the above web page will result is a display of:



If com port is Open or:



If com port is Closed

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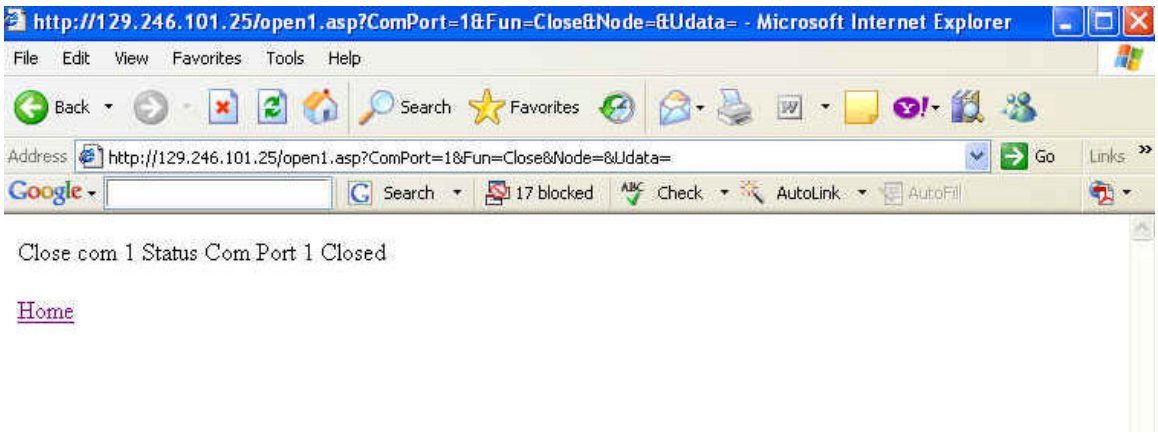
ASP Close Com Port Example

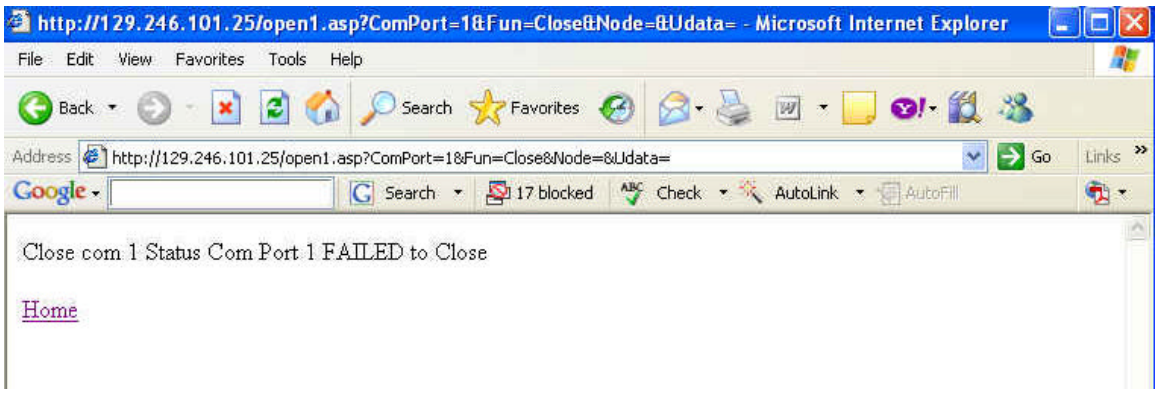
```
<html>
<head>
</head>
<body>

<%
' Declaring variable
Dim sd1
' Creating instance of our Component
Set sd1 = Server.CreateObject("dmweb.Close_Com")
Response.Write "Close Com Status " & sd1.Close_Com(4)    '← n(4) is don't care
Set sd = Nothing
%>
```

Running the above web page will result is a display of:



Or if it failed:



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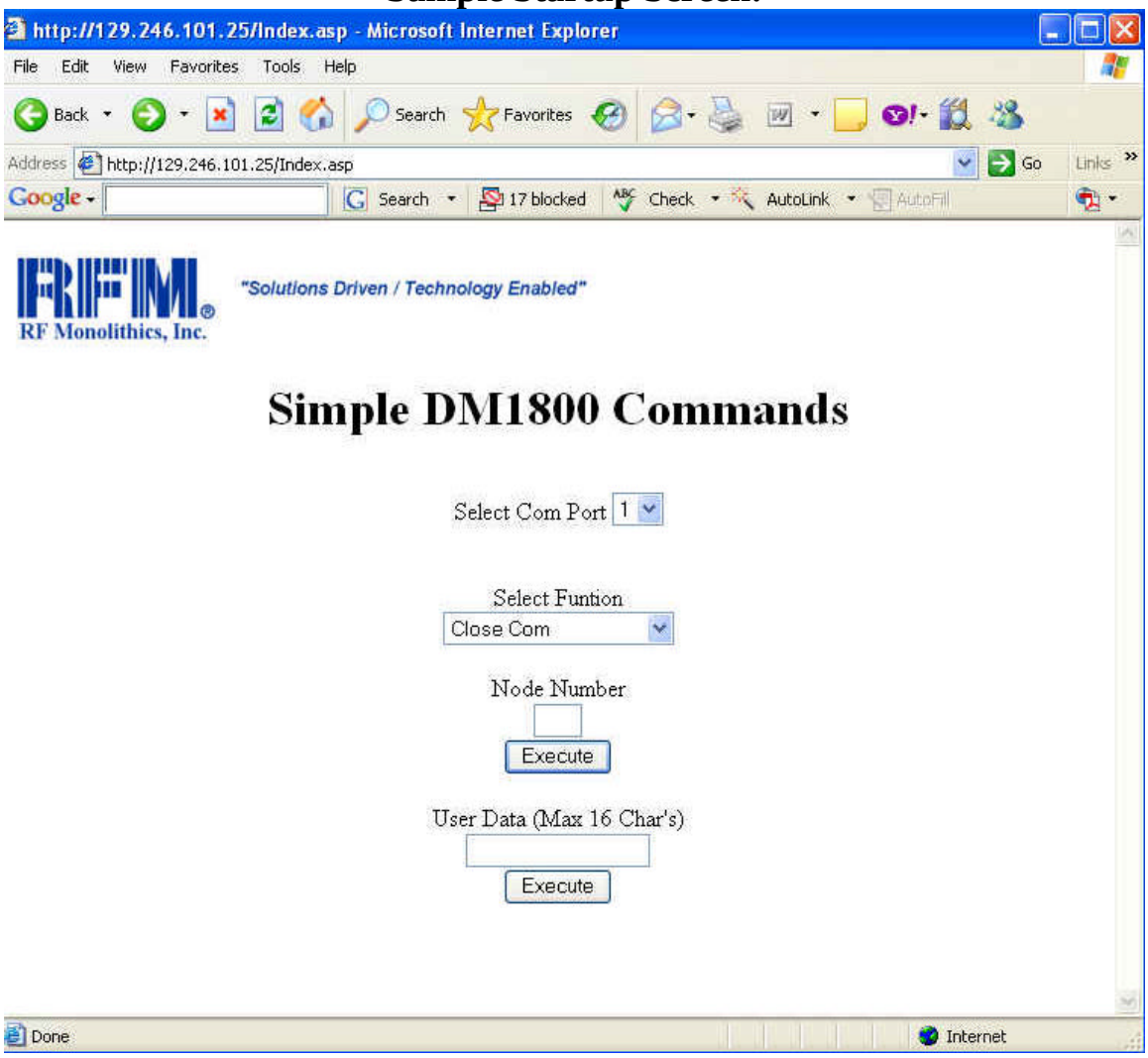
Simple ASP Example with Drop Downs Menus

Sample Startup Screen:



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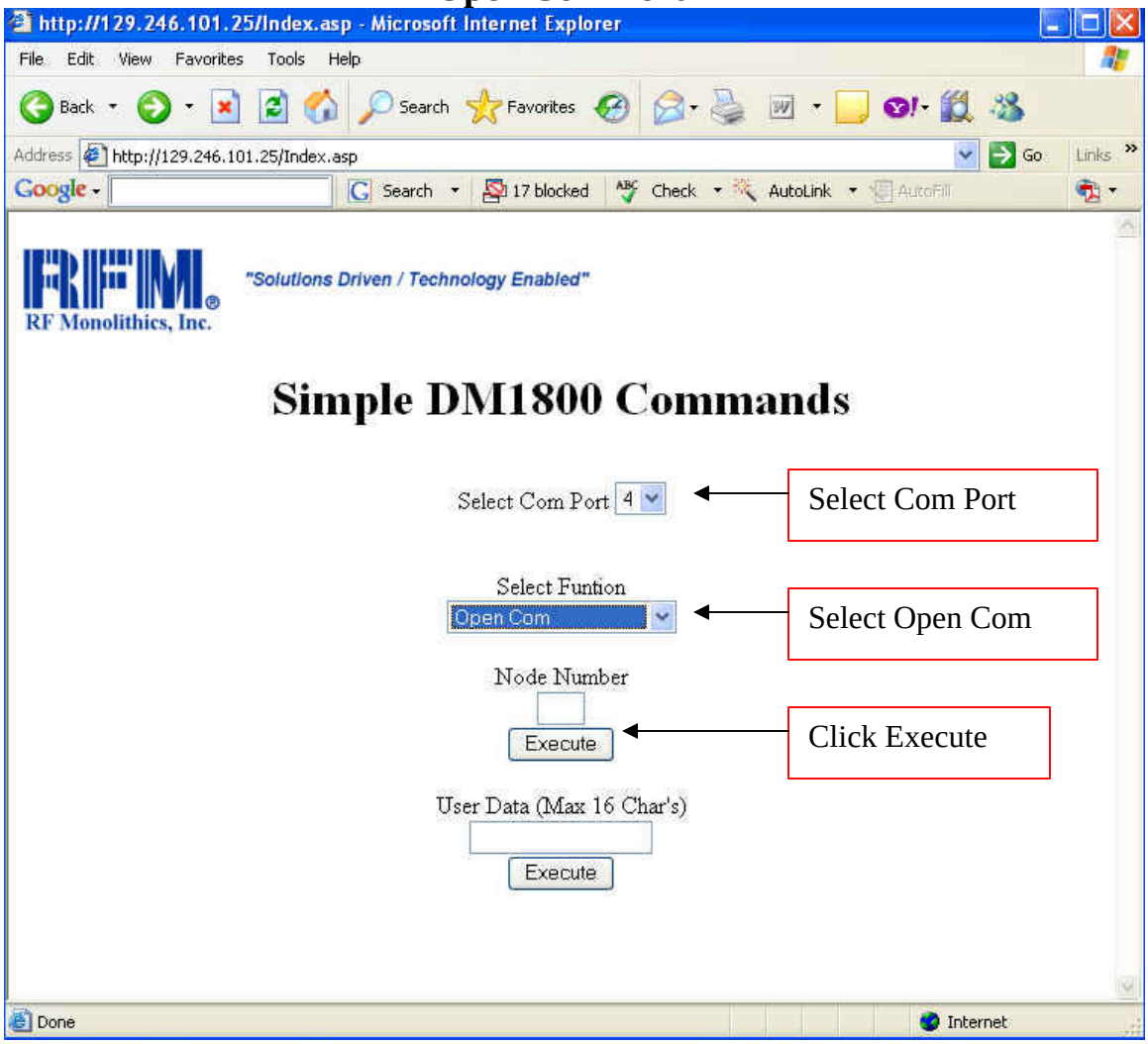
Sample Screen
Open Com Port 4



After selecting com port 4 and selecting the Open Com Function click the "Execute" button.

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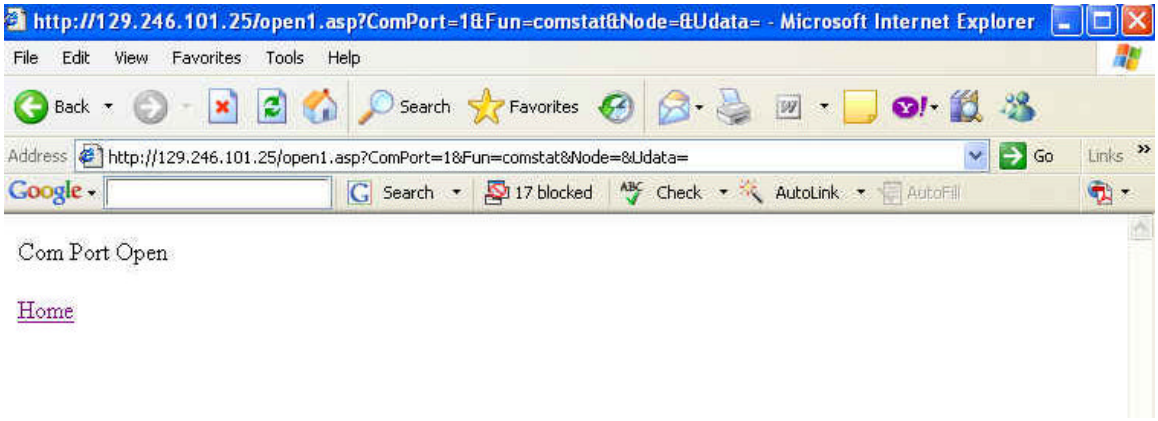
Response from the above:



Now you can execute any of the DMWEB.DLL commands. You can press Home or the Back button to execute another command.

Sample ASP Web Page Demo

```
<html>
<head>
</head>
<body>

<IMG height="68" width="406" border="0" SRC="rfmlogo.gif">
<H1><Center>Simple DM1800 Commands</H1>
<form name="frmForm" action="open1.asp">
<p>
<br>Select Com Port
<select size="1" name="ComPort">
<option value="1">1</option>
<option value="2">2</option>
<option value="3">3</option>
<option value="4">4</option>
<option value="5">5</option>
<option value="6">6</option>
<option value="7">7</option>
<option value="8">8</option>
</select>
<br>
<!<input type="button" name="btnSubmit" onClick="submit()" value="Open Port">
<br><br>
Select Funtion <br>
<select size="1" name="Fun">
<option value="Open">Open Com</option>
<option value="Close">Close Com</option>
<option value="comstat">Com Status</option>
<option value="fOpen">Find Com Port</option>
<option value="bin">Read Binary In</option>
<option value="bout">Read Binary Out</option>
<option value="bon">Set Binary ON</option>
<option value="boff">Set Binary Off</option>
<option value="rad">Read Temperature</option>
<option value="rnode">Reset Node</option>
<option value="rbase">Reset Base</option>
<option value="read">Read Com & Display</option>
<option value="rusera">Read User A</option>
<option value="ruserb">Read User B</option>
<option value="susera">Set User A</option>
<option value="suserb">Set User B</option>
</select>
</p>
```

```
Node Number <br>
<input type="text" name="Node" size="1"><br>
<input TYPE="Button"  onClick="submit()" " VALUE="Execute"><br>
</p>

User Data (Max 16 Char's) <br>
<input type="text" name="Udata" size="16"><br>
<input TYPE="Button"  onClick="submit()" " VALUE="Execute"><br>

<br>
<br>
</center>
</body></html>
```

The above code will generate the following web page:

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The above page calls the following ASP code to interpret the command being passed from the drop down menus or typed in the text boxes when the "Execute" button is pressed. You can see the commands in the URL window while running the program:

```
<html>
<head>
</head>
<body>

<META HTTP-EQUIV=REFRESH CONTENT=5;>

<%                                          ‘ Start of Script
                                            ' Declaring variable

Dim port
Dim Node
Dim sd1
port = request("ComPort")                   ‘ Com Port being passed
Node = request("Node")                      ‘ Node number being passed
Fun =  request("Fun")                       ‘ Command to be executed being passed
User_data =  request("Udata")               ‘ Text String data being passed

MyString = String(16, "*")                  ' load MyString with *, filler
Mylen = Len(User_data)                      ‘ get length of data being passed
If Mylen < 16 Then                          ‘ if less than 16, make it 16 char.
  fill =  16 – Mylen                        ‘ using the filler
  LeftString = Left(MyString, fill)         ' make left string len equal fill len
  us_data = User_data & LeftString          ' min/max len now 16 back filled with *
  User_data = us_data
end if

If Mylen > 16 Then                          ‘ if greater than 16 then
  LeftString = Left(User_data, 16)          ' force it to be 16 long only
  User_data = LeftString                    ‘ First 16 chars will be sent only
end if

If Fun = "Open" then                        ‘ check for Com Open command
                                            ' Creating instance of our Component
      Set sd1 = Server.CreateObject("dmweb.OpenCom")
      Response.Write "Open com " & port &  " Status " & sd1.OpenCom(port)
      Set sd1 = Nothing                     ‘ Release the pointer

end if
```

```
If Fun = "Close" then                                   ‘ check for Close Com Command
                                                        ' Creating instance of our Component
      Set sd1 = Server.CreateObject("dmweb.CloseCom")
      Response.Write "Close com " & port &  " Status " & sd1.CloseCom(port)
      Set sd1 = Nothing                                 ‘ Release the pointer

end if


If Fun = "comstat" then                                 ‘ check for Com Status command
                                                        ' Creating instance of our Component
      Set sd1 = Server.CreateObject("dmweb.ComStat")
      Response.Write  sd1.ComStat(port)                       ‘ Send data to web page
      Set sd1 = Nothing                                 ‘ Release the pointer

end if

If Fun = "fOpen" then                                   ‘ check for Fopen command, find the com port
                                                        ' Creating instance of our Component
    Set sd4 = Nothing                                   ‘ Release the pointer
    Set sd4 = Server.CreateObject("dmweb.ComStat")
    Set sd1 = Server.CreateObject("dmweb.OpenCom")
port = 4
    Count = 1
    while Count < 9
      mydata = sd1.OpenCom(port)                        ‘ Response  put in to mydata
      dat = Instr(1,mydata,"FAILED",1)                  ‘ Look for Failed
      if dat > 0 then                                   ‘ if > 0 then it found it
        port = port + 1                                 ‘ inc port count
        Count = Count + 1                               ‘ and loop count
      end if
      mydata1 = sd4.ComStat(port)                       ‘ get com port staus
      data = Instr(1,mydata1,"Com Port Open",1)         ‘ Look for it being open
      if data > 0 then Count = 12                       ‘ if so, get out of loop
    wend
    if Count = 9 then Response.Write "FAILED Opened Port"    ‘ Send data to web page
    if Count = 12 then Response.Write "Opened Port " & Port & " "
    Set sd1 = Nothing                                   ‘ Release the pointer
    Set sd4 = Nothing                                   ‘ Release the pointer
end if

If Fun = "boff" then                                    ‘ check for binary out off command
Dim sd2
                                                        ' Creating instance of our Component
```

```
        Set sd2 = Server.CreateObject("dmweb.Set_Binary_Off")
        Response.Write sd2.Set_Binary_Off(Node)        ‘ Send data to web page
        Set sd2 = Nothing                              ‘ Release the pointer
End if


If Fun = "bon" then                            ‘ check for binary on command
Dim sd3
                                               ' Creating instance of our Component
        Set sd3 = Server.CreateObject("dmweb.Set_Binary_On")
        Response.Write sd3.Set_Binary_On(Node)       ‘ Send data to web page
        Set sd3 = Nothing                      ‘ Release the pointer
End if


If Fun = "bout" then                           ‘ check for read binary command
Dim sd4
                                               ' Creating instance of our Component
      Set sd4 = Server.CreateObject("dmweb.Read_Binary_Out")
      Response.Write sd4.Read_Binary_Out(Node)    ‘ Send data to web page
      Set sd4 = Nothing                          ‘ Release the pointer

      ocount  = Second(Now)                      ‘ Get current second
      if ocount > 57 then ocount = 1             ‘ Don’t get stuck on turn of clock
      while ncount <> ocount+1                   ' Delay 1 second
        ncount = Second(Now)                     ' windows is never real time!!
      wend


                                               ' Creating instance of our Component
       Set sd1 = Server.CreateObject("dmweb.Read_Com")
       Response.Write  sd1.Read_Com(Port)      ‘ Send data to web page
       Set sd1 = Nothing                       ‘ Release the pointer

End if

If Fun = "rad" then                            ‘ check for read A/D command

Dim sd5
Dim mydata1
Dim Mypos
Dim sd22
                                               ' Creating instance of our Component
       Set sd5 = Server.CreateObject("dmweb.Read_AD_10bit")
       sd5.Read_AD_10bit(Node)                 ‘ Execute the command with no reponse
```

```
Set sd5 = Nothing                          ‘ Release the pointer

      ocount  = Second(Now)                ‘ Get current second
      if ocount > 57 then ocount = 1       ‘ Don’t get stuck on turn of clock
      while ncount <> ocount+1             ' Delay 1 second
        ncount = Second(Now)               ' windows is never real time!!
      wend


                                           ‘ Creating instance of our Component
       Set sd22 = Server.CreateObject("dmweb.Read_Com")
       mydata = sd22.Read_Com(Port)        ‘ Response goes into mydata

if StrComp(mydata,Node,1) then             ‘ Look for Node number to match
  MyPos = Instr(1,mydata, "Temp. ", 1)     ‘ If so, look for Temp
  if Mypos >1 then                         ‘ It’s there if > 1
    mydata1 = Right(mydata,7)              ‘ Only display temperature
    Response.Write mydata1                 ‘ Send data to web page
  end if
end if

   Set sd1 = Nothing                       ‘ Release the pointer

End if


If Fun = "rnode" then                      ‘ check for reset node command

                                           ' Creating instance of our Component
       Set sd1 = Server.CreateObject("dmweb.Reset_Node")
       Response.Write sd1.Reset_Node(Node) ‘ Send data to web page
       Set sd1 = Nothing                   ‘ Release the pointer

                                           ' Creating instance of our Component
       Set sd1 = Server.CreateObject("dmweb.Read_Com")
       Response.Write  sd1.Read_Com(Port)  ‘ Send data to web page
       Set sd1 = Nothing                   ‘ Release the pointer

End if


If Fun = "rbase" then                      ‘ check for reset base command

                                           ' Creating instance of our Component
```

```
        Set sd1 = Server.CreateObject("dmweb.Reset_Base")
        Response.Write sd1.Reset_Base(Node)     ‘ Send data to web page
        Set sd1 = Nothing                       ‘ Release the pointer

                                                ' Creating instance of our Component
        Set sd1 = Server.CreateObject("dmweb.Read_Com")
        Response.Write  sd1.Read_Com(Port)      ‘ Send data to web page
        Set sd1 = Nothing                       ‘ Release the pointer

End if

If Fun = "read" then                            ‘ check for read com command

                                                ' Creating instance of our Component
        Set sd1 = Server.CreateObject("dmweb.Read_Com")
        Response.Write  sd1.Read_Com(Port)      ‘ Send data to web page
        Set sd1 = Nothing                       ‘ Release the pointer

End if


If Fun = "susera" then                          ‘ check for set user data a command

                                                ' Creating instance of our Component
        Set sd1 = Server.CreateObject("dmweb.Set_User_A")
        Response.Write sd1.Set_User_A(Node,User_data)        ‘ Send data to web page
        Set sd1 = Nothing                       ‘ Release the pointer

                                                ‘ Creating instance of our Component
        Set sd1 = Server.CreateObject("dmweb.Read_Com")
        Response.Write  sd1.Read_Com(Port)      ‘ Send data to web page
        Set sd1 = Nothing                       ‘ Release the pointer

End if

If Fun = "suserb" then                          ‘ check for et user data b command

                                                ' Creating instance of our Component
      Set sd1 = Server.CreateObject("dmweb.Set_User_B")
      Response.Write sd1.Set_User_B(Node,User_data)       ‘ Send data to web page
      Set sd1 = Nothing                         ‘ Release the pointer

                                                ' Creating instance of our Component
      Set sd1 = Server.CreateObject("dmweb.Read_Com")
```

```
      Response.Write  sd1.Read_Com(Port)  ‘ Send data to web page
      Set sd1 = Nothing                   ‘ Release the pointer

End if

If Fun = "rusera" then                    ‘ check for read user data a command

                                          ' Creating instance of our Component
      Set sd1 = Server.CreateObject("dmweb.Read_User_A")
      sd1.Read_User_A(Node)
      Set sd1 = Nothing                   ‘ Release the pointer

     ocount  = Second(Now)                ‘ Get current second
     if ocount > 57 then ocount = 1       ‘ don’t get stuck on turn of  clock
     while ncount <> ocount+1             ' Delay 1 second
       ncount = Second(Now)               ' windows is never real time!!
     wend

                                          ' Creating instance of our Component
      Set sd1 = Server.CreateObject("dmweb.Read_Com")
      mydata = sd1.Read_Com(Port)

if StrComp(mydata,Node,1) then            ‘ Look for Node number to match
  MyPos = Instr(1,mydata, "D", 1)         ‘ If it does look for “D”
  if Mypos >1 then                        ‘ It’s there is > 1
    mydata1 = Right(mydata,49)            ‘ Get data to display
    Response.Write mydata1                ‘ Send data to web page
  end if
end if
Set sd1 = Nothing                         ‘ Release the pointer

End if

If Fun = "ruserb" then                    ‘ check for read user data b command
                                          ' Creating instance of our Component
      Set sd1 = Server.CreateObject("dmweb.Read_User_B")
      sd1.Read_User_B(Node)
      Set sd1 = Nothing                   ‘ Release the pointer

     ocount  = Second(Now)                ‘ Get current second
     if ocount > 57 then ocount = 1       ‘ Don’t get stuck on turn of clock
     while ncount <> ocount+1             ' Delay 1 second
       ncount = Second(Now)               ' windows is never real time!!
     wend
```

```
                                        ' Creating instance of our Component
      Set sd1 = Server.CreateObject("dmweb.Read_Com")
      mydata = sd1.Read_Com(Port)       ‘ Results are put in to mydata

if StrComp(mydata,Node,1) then          ‘ Find Node Number
  MyPos = Instr(1,mydata, "D", 1)       ‘ Look for data
  if Mypos >1 then                      ‘ If there will be > 1
    mydata1 = Right(mydata,49)          ‘ Get data to send
    Response.Write mydata1               ‘ Send data to web page
  end if
end if
Set sd1 = Nothing                       ‘ Release the pointer
End if

%>

<P><A href="Index.asp">Home </A><BR><BR>
```