The HX19 Access Program

This program is supplied to help the user get started using the hx19, i.e. the only purpose is to make it easier for the programmer to write his own code.

Please be aware that this demo software is written using Visual Basic 6, so there may be compatibility issues. VB6 is a dying programming language, and will not be supported in the future by Microsoft. The demo program made available is compiled using windows XP service pack 3. If you are attempting to install the program on XP service pack lower than sp3, then the DLL functions may be out of date and you may be asked if you wish to replace them. We don't recommend you replace the functions, if you don't there may be a compatibility issues when you run the hx19access program.

When the program hx19access (RF network access) is executed for the first time, a red window will pop up requesting the correct Com Port. The user can go to windows control panel and find "Device Manager". Under Ports (COM & LPT) the port number to which the Hx19ms is linked can be found. Visual basic may not find ports over 16. In case all ports are occupied, it may be possible to share one of the already allocated ports under 16. After typing in the serial port number then click on Ok, the port number is stored on a file called port.txt, if needed the port can be changed there.

The hx19ms must be connected to a USB port, before the hx19access program is executed.

```
Dim linebuffer(100) As String          'only used for the scrolling routine, not linked to hx19 operations
Dim nn%
Dim engage As Boolean

Private Sub Form_Activate()
Dim cc As String

'The following code examines the com port selected to see if it is open and the device available
'if there is an error, it gives the user a chance to enter in the correct port number
'use Control Panel to determine which port is being used for the hx19 system
'this code section is not important for using the hx19

Text4.Visible = False
Command1.Visible = False
Check1.Visible = True

   On Error GoTo fixit
      Open "port.txt" For Input As 1
       Input #1, Port
      Close 1
      GoTo allOK
fixit:
      Check1.Visible = False
      Text4.Visible = True
      Command1.Visible = True

Text6 = "Type port number into the blue window above and click OK (find the correct port number under Device Manager)"

      Do: DoEvents: Loop Until engage = True
      Open "port.txt" For Output As 1
        Print #1, Val(Text4)
      Close 1
      Text4.Visible = False
      Command1.Visible = False
      Check1.Visible = True
      Port = Val(Text4)
allOK:
Text6 = ""
'END PORT NUMBER CHECK --------------------------------------------------------------------

'The following code segment is the heart of the interface to the hx19ms

   Form1.MSComm1.CommPort = Port           'this port number must corrispond to the hx19ms usb port
   Form1.MSComm1.Settings = "256000,N,8,1" '256Kbaud, no parity, 8bit interchange and 1 stop bit
   Form1.MSComm1.PortOpen = True
   Form1.MSComm1.InputLen = 1              'get serial characters one by one
   Form1.MSComm1.InBufferCount = 0         'make sure there is no data residue from last application in buffers
   Form1.MSComm1.OutBufferCount = 0        'make sure output buffer is empty
ticnt = 0
 Do
   Do:                                     'loop until there's a character in input buffer
    DoEvents
   Loop While Form1.MSComm1.InBufferCount < 1
                                           'using MSComm1 control component supplied with visual basic 6
   cc = Form1.MSComm1.Input                'input a character from hx19ms Mscomm1
    If cc = Chr(13) Then                   'if it is a data delimiter (carriage return) then display line
     tScroll comline + vbCrLf              'tScroll scrolls display down one line
     If Check2.Value = 1 Then Print #1, comline  'save data on file 1 when log option is selected
     comline = ""                          'clear this data line and prepare for then next
    Else
     comline = comline + cc                'while there's no delimiter collect data into a line
     Text3 = Text3 + cc                    'accumulate data into the text to be scrolled
    End If
 Loop                                      'continuous loop

End Sub
```

```
Private Sub Check1_Click()
    'Any hx19ms receiving the command $ will initiate syncronized strobing
    'the command % stops the sync sequence
    If Check1.Value = 1 Then checkOut "M&$" Else checkOut "M&%"
End Sub


Private Sub Command3_Click()
    checkOut Text6                          'here the content of Text6 is transmitted via usb com port to the hx19ms
End Sub


Private Sub checkOut(temst as string)
Dim xsum as integer, xx as string
    'this routine sums up all Ascii characters entered, and creates an hx19 accepted checksum.
    xsum = 0
    For i = 1 To Len(temst)                 'compute the checksum of the string
        xx = Mid(temst, i, 1)
        xsum = xsum + Asc(xx)               'accumulate ASCII codes
    Next
    temst = temst + "/" + Hex(xsum)         'append the checksum in hexadecimal format
    Form1.MSComm1.Output = temst + Chr(13)  'sends a string to the hx19ms with the correct checksum attached
End Sub


Private Sub Text6_Change()
    'This routine keeps track of the total characters entered, should not exeed 116 characters.
    Text5 = Format(Len(Text6), "#")
End Sub
```

'Remaining routines are unimportant and secondary to the understanding of the hx19

```
Private Sub Check2_Click()
    'data coming from the hx19ms is text format and can be viewed using windows notepad
    If Check2.Value = 1 Then
        Open "hx19.log" For Output As 1     'save incoming hx19ms text data on file called hx19.log
    Else
        Close 1
    End If
End Sub


Private Sub Command1_Click()
    engage = True                           'in case of a com error, user may input correction and then continue
End Sub


Private Sub tScroll(nline)                  'scrolls 16 lines of text through text window
Dim jj%
'routine scrolls down one line for display purposes only, it has otherwise nothing to do with hx19 system
    linebuffer(nn) = nline
    nn = (nn + 1) And 7
    jj = nn + 1
    Text3 = ""
    Do
        Text3 = Text3 + linebuffer(jj)
        jj = (jj + 1) And 7
    Loop Until jj = nn
End Sub


Private Sub Form_Terminate()
    Close                                   'make sure no files are left open when the program ends
    End                                     'if end isn't executed before termination, com port may be left open
End Sub


Private Sub Form_Unload(Cancel As Integer)
                                            'to be absolutely sure
    Close                                   'make sure no files are left open when the program ends
    End                                     'if end isn't executed before termination, com port may be left open
End Sub
```