

Welcome to November's *Monitor*.

Last month we sent half of you the newsletter as a two column format, with more fancy headings etc. To the other half we sent the newsletter in its old one column format. We asked which format you preferred, and if you would like to receive the full articles as you have done up to now, or snippets of articles with links to the web site if you needed more information. Thank you very much to everyone who returned our short survey. The results are below.

If you would **prefer a text-only** version of the *Monitor* let us know and we'll put you on our text only list.

You can also now download a pdf version from
<http://www.windmill.co.uk/monitor184.pdf>

Should you wish to remove yourself entirely from our mailing list go to
http://www.windmillssoft.com/daqshop/Monitor_Newsletter.html



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How would you like the Newsletter? (Survey Results)

Significantly more of you (2:1) wanted full articles as opposed to snippets with links back to the website. However, an almost equal amount of people chose a 2-column format as a 1-column. There was no significant difference between the answers of those who received the one-column newsletter and those that received the two. Your comments included:

"The way I use the Monitor, I would prefer full articles. (I can read or save them directly. I have plenty of email blogs that give me snippets, thanks no.) Plain formatting works fine for me. I am after content not form."

"Modernizing this newsletter is appreciated. Thanks."

"The new format is pretty but not an improvement...The old format was easier to use."

"Fancy with more pics but single column format."

So - trying to please the majority, we are keeping it at one column with the full articles but a little prettier. We will though, add a link to any relevant web page at the beginning of the article, so if you prefer you can jump there rather than scrolling down the newsletter. We've added more colour and changed the font for those who wanted it to look more attractive, but we hope it is still easily readable for everyone. And we've added a [link to a pdf version](#) if you prefer to download that.

Thank you also to everyone who included suggestions for future topics in *Monitor*. Some of these we have already covered - see the subject archive at <http://www.windmill.co.uk/monitorindex.html> for a list.

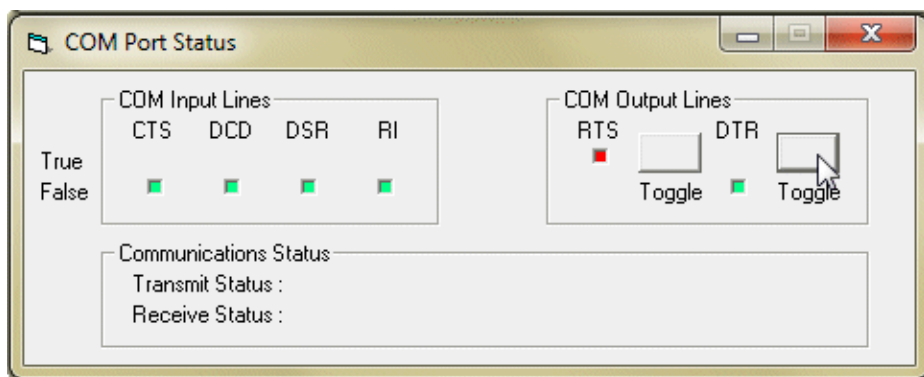
Please get in touch with any more comments, suggestions or criticisms - we appreciate hearing from you. E-mail monitor@windmillsoft.com.

Troubleshooting RS232 Connections: the Status of the COM Port Lines

Weblink: More detailed information on the RS232 lines is at <http://www.windmill.co.uk/rs232-communication.html>

The free ComDebug (available to subscribers from <http://www.windmill.co.uk/jsarrpsrr.htm>) provides many options to help you locate faults in RS232 communications. One of these is by showing you the status of the COM port lines and letting you switch some of these lines.

In ComDebug's Terminal screen, select the Status button. This shows you whether the COM port's input and output lines are true (high) or false (low). Red indicates true or high, green false or low.



CTS - Clear To Send

If you are using Hardware Flow Control in your COM Settings, CTS must be true.

DCD - Data Carrier Detect

Should have no effect on data flow and will normally be false. If it is true you may have a wiring error.

DSR - Data Set Ready

Should have no effect on data flow and will normally be false. If it is true you may have a wiring error.

RI - Ring Indicator

Should have no effect on data flow and will normally be false. If it is true you may have a wiring error.

COM Output Lines

You can control the state of these lines - check your instrument's Manual for details of the settings it expects. (Remember, red indicates true or high and green false or low.)

RTS - Request to Send

This is set true by a computer when it wishes to transmit data.

DTR - Data Terminal Ready

This should be set true by a computer whenever it is powered on. It lets the instrument check that the computer is on line.

Further Reading:

When to use RS232 Handshaking or Flow Control?

<http://www.windmill.co.uk/handshaking.html>

Serial Ports and RS232 Reference Guide

<http://www.windmill.co.uk/rs232-communication.html>

Questions on Using Windmill

Question:

I have a completed instrument file that works in ComDebug: It is working in terminal mode and I can also use the "Run" feature to repeat poll for data. The reply string is being parsed properly. I ran SetupIML to create the IMS file, and that seemed to work properly. But when I try to use Chart or Logger, although everything loads correctly and the poll commands are being sent, every channel only returns "Error 105".

Answer:

Error 105 means "The hardware is not yet supplying data". If you can see data in ComDebug, the problem is probably with the instrument timings. For instruments being read in the background, make sure that the data persistence time is longer than the logging interval. The persistence time sets how long a reading remains valid. More help is at <http://www.windmill.co.uk/debugging-communications.html>.

Excel Corner: Logging Data to the Top

Weblink: [How to Log Data into Excel's Top Row](#)

The macros we have previously given for automatically collecting data with Excel have all added data to the bottom of the spreadsheet. Today we explain how to log data to the top of the sheet, and move all the previously logged data down.

As a starting point we are using the macro given in Issue 57 of Monitor: How to Log only when New Data Arrives (<http://www.windmill.co.uk/monitor57.html>). To this we have to add the line:

```
Cells(1, 1).EntireRow.Insert
```

```
Microsoft Visual Basic - insertdatatopline.xls - [Module1 (Code)]
File Edit View Insert Format Debug Run Tools Add-Ins Window Help
Sub MonitorDDE ()
' Monitors the DDE links for updates
' When data is updated runs the subroutine LogData
ActiveWorkbook.SetLinkOnData "WINDMILL|Data!AllChannels", "LogData"
End Sub

Sub LogData ()
'Initiates conversation with Windmill DDE Panel
ddech = DDEInitiate("Windmill", "Data")

'Requests data from 00000 and stores it in
'memory under mydata.
mydata = DDERequest(ddech, "AllChannels")

' Ignores any warnings generated
On Error Resume Next

'Insert new row at top of sheet
Cells(1, 1).EntireRow.Insert

' Finds the lower & upper boundaries of array, to
' determine the number of columns needed to store
' the data.
Lower = LBound(mydata, 1)
Upper = UBound(mydata, 1)

' Inserts data from the array into a row of cells in a
' worksheet called Sheet1.
For Column = Lower To Upper
Sheets("Sheet1").Cells(1, Column).Value = mydata(Column)
Next Column

'Ends DDE conversation
DDETerminate (ddech)
End Sub
```

The macro assumes that you are using [Windmill software](#) to continuously collect measurements and display them in the DDE Panel.

The method in full is as follows

1. In Windmill DDE Panel select the Copy to Clipboard button and copy data from All Channels.
2. From Excel's Edit menu choose Paste Special and "Paste as Links" into the first row of a worksheet called "Sheet1".
3. Create the macro given above and [here](#), then run MonitorDDE.

The MonitorDDE routine monitors the data which is being updated via DDE. When values change, it calls the LogData procedure. This grabs the new data from Windmill DDE Panel, inserts a new row at the top of the worksheet and writes the new values into it.

You can copy the code from <http://www.windmill.co.uk/excel/excel-top-row.html>

Read more Excel tips at <http://www.windmill.co.uk/excel/excel-tips.html>

DAQ News Round-up

Welcome to our round-up of the data acquisition and control news. If you would like to receive more timely DAQ news updates then follow us on [Twitter](#) - @DataAcquisition or Google+ - <https://plus.google.com/10707268302549663022/>

Pigs Probe Pipelines

Smart inspection 'pigs' are probing the insides of a vast new gas pipeline beneath the Baltic. While gliding through the 41mm thick pipes, the pigs

collect vast amounts of high-resolution data.

Source: The Engineer

<http://www.theengineer.co.uk/>

New Sensor Monitors Ocean Acidification

Scientists and engineers have achieved the first step in developing a cost-effective micro sensor for long-term monitoring of ocean acidification.

Source: SCUBA News

<http://news.scubatravel.co.uk/>

Pop music makes solar cells produce more electricity

Solar cells convert sunlight into electricity more efficiently when loud music is played to them - as long as it's pop or rock electronics.

Source: New Scientist

<http://www.newscientist.com/>

Underwater Internet coming Soon?

You don't usually find a wireless network whilst underwater, but that may change as researchers at the University at Buffalo are developing a deep-sea internet. They hope that this technological breakthrough will lead to improvements in tsunami detection, pollution monitoring and other activities.

Source: SCUBA News

<http://news.scubatravel.co.uk/>

Internet of Things a pivotal catalyst for the ICT industry

An explosion of Internet of Things over the next few years will be driven by low cost sensors, cloud computing, advanced data analytics and mobility, according to Frost and Sullivan

Source: Frost and Sullivan

<http://tinyurl.com/nn6doyq>

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For previous issues by subject see <http://www.windmill.co.uk/monitorindex.html>

FREE DATA ACQUISITION SOFTWARE

As a thank you for subscribing we offer you the ComDebug data logging and Com port trouble-shooting software for free. Log data over RS232, RS422, RS485 or Modbus. Also included is a free month's trial of the Windmill 7 logging, charting and control programs. To download the software go to

<http://www.windmillsoft.com/jsarpsrr.htm>

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