

# Unidata Newsline

Unidata Newsline No. 7, April 2008

## Unidata around the world

Unidata Pty Ltd has been active in Canada, the USA, China, and other parts of Asia, in recent months. Adam Baldwin and Clint Barnes completed an installation in Canada and the Unidata presence in China has grown significantly, with the appointment of master reseller arrangements in Wuhan, one of the major industrial cities in China.

It was very sad to hear of the passing of Don Bartley from Unidata America earlier this year. Don was a great colleague and will be sadly missed. Life moves on though and we are now re-establishing arrangements to cover the Unidata Pty Ltd USA market and hope to provide an improved service, especially service and support arrangements, to all clients in the USA.

Matt Saunders, General Manager



Clint Barnes at the installation site in British Columbia

## Unidata equipment measures rivers in Thailand

In February, Unidata secured a tender for a large telemetry project in Thailand, which incorporates measuring instruments and telemetry units for remotely monitoring the vast Thai river network. The Unidata system includes a Neon Server, Neon Remote Terminals, and Unidata Precision Water Level instruments. The initial telemetry system will have approximately 130 stations connected, and is expected to grow to more than 500 stations.

The system will monitor river levels throughout Thailand. It will report measurements, and send alarms, back to a central server via GPRS, the general packet radio service which is used on cellular telephone networks. There are several different regions or zones for the Royal Irrigation Department in Thailand and each zone will be responsible for monitoring the measurement stations within its zone. Neon Software allows for such hierarchy as part of its standard security facilities. The Royal Irrigation Department head office in Bangkok will be able to overview all stations in all zones. Alarms are set up in the central Neon server to contact key Royal Irrigation Department staff by SMS text message and by email if there are any out of limits/high river levels, 24 hours-a-day, 365 days-a-year.

Unidata has had a good working relationship with the Royal Irrigation Department over some years and we are very pleased to continue this relationship.



Measuring instruments in still wells in a Thai river



## Neon system installed in remote British Columbia

Cloudworks Energy Inc, an independent power producer in British Columbia, has recently installed a Unidata Neon system to measure river parameters. The system includes a mix of smaller NRT Terrestrial units with a cellular data modem, and the larger NRT Satellite units with a satellite data modem.

Canada is leading the way in environmentally-friendly power production, and has a regulatory framework which allows smaller power companies to set up micro-hydro systems to produce electricity. Micro-hydro electricity companies feed power into the grid from many smaller hydroelectric power stations. Unlike traditional hydroelectric stations, which involve damming rivers and all the associated environmental and social disruption this can cause, the Canadian model allows for a small diversion of river flow through a micro-hydro power station, with the water then directed back into the river.



Our engineers have had to get used to working in some very cold Canadian conditions, rather than the usual hot and dry conditions we experience in Australia and the Middle East. We needed some different clothing and travel arrangements!

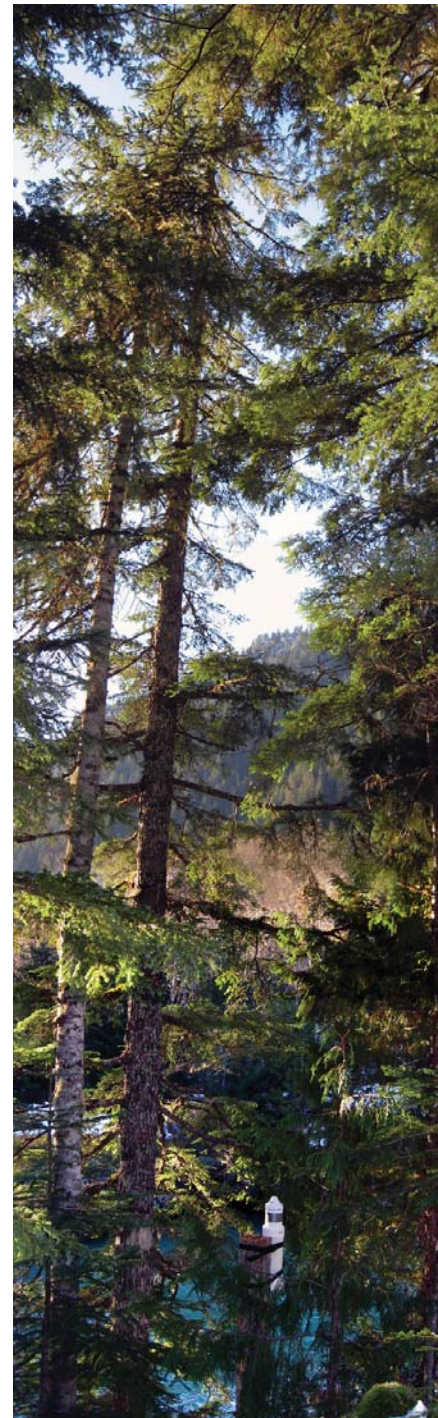
The Neon systems being installed by Cloudworks are in remote locations with difficult terrain. One of the NRT Satellite units was buried in recent snowfalls: the photos below and left show just how deep the snow was.



*Snowed under but still working!*

The frequency of operation for the NRT Satellite units is in the L band spectrum which does not suffer much attenuation in rain, cloud, and snow, so the unit continued operating despite being under a couple of metres of snow. Satellite units using the KU band spectrum are subject to high signal attenuation or rain and cloud fade, and are not as suitable for remote logger applications.

The NRT Satellite units were also used in forest areas with high trees and worked well despite the tree cover. The NRT Satellite design allows for regular satellite visibility checking, and programmable retry intervals, as well as a fast transfer when a satellite is acquired so operations in areas where satellite visibility is partially restricted are possible.





## Introducing the Unidata Service Department

Unidata's service department handles hundreds of repairs each year. The department is headed by Paul Dyer, who has many years of experience servicing complex equipment, including a long stint as a senior technician for a major mining company in northwestern Australia.



Paul Dyer at work

Unidata provides recalibration and general refurbishment services, repairs damaged or faulty equipment, updates internal components, and can provide updated firmware to loggers and instruments.

Sometimes we get challenges into our service area, such as a logger system which had been submerged in water – not the conditions they are designed to operate in. Our service team managed to repair the logger and it is back in use.



A logger system drying out after submerision

We have also dealt with equipment exposed to lightning, which causes some dramatic faults, and equipment with mechanical damage. Broken equipment is usually a candidate for a service replacement, which we offer at discounted prices.



Smashed!

Our service policy is to provide ten years of active support life, and thereafter provide support and discounted upgrade options to newer models of equipment as a support option – an attractive alternative for many customers. We keep a limited stock of parts for old equipment, and recently had some telemetry units in for repair from one of our water customers which were almost 20 years old. And they are still in active service!

Occasionally we do receive equipment for repair or service without any fault information, and have even received equipment without the sender's details, so we can't send the equipment back! If you have equipment in need of service or repair, please help us by visiting our website and completing and returning the form on our 'Contact Us' page.



## Product News

### Wireless Bluetooth communication with Starlog V4

Be free to move while communicating with Unidata loggers. Our engineers have sourced and successfully tested another Bluetooth adaptor, the Free2Move serial plug, using Starlog V4.

The Free2Move plug integrates a Bluetooth module in a compact plug and has a nominal range of approximately 100 m. No external drivers are needed to use the plug, and a user-friendly Windows application is included to configure the plug to suit your requirements. The plug is very flexible, and can operate as a slave or master. If configured in master & slave mode, the two plugs will provide transparent communication like a 100 m cable – without the cable!

Once the Bluetooth is configured on your notebook, a virtual serial port is made available to the Starlog V4. All that is needed now is to map in the Starlog V4 datalogger management software package. Accessing the logger via Bluetooth wireless is like setting the Starlog V4 to access a virtual COM port, for example, COM6.



We think that this Bluetooth plug provides an excellent low-cost wireless solution for use with Unidata dataloggers in environments where cables are not convenient. The plug has low standby power consumption at 8.2mA, and will operate over a long period using an external power 5 Vdc via 3 AAA batteries.

### New 'Next G' modem options available



Telstra in Australia will soon be switching off the older CDMA network. Customers on this network need to migrate to the new WCDMA/Next G network.

Unidata has several options for customers who need to move to the new network. WCDMA/Next G modem modules are available to work with Neon Remote terminals, which operate using the modern IP push technology (NRT terrestrial). There are also stand-alone modems for the traditional dial-up pull technology.

Unidata still uses and recommends GPRS/GSM modules in Australia and overseas. These more standard modules are usually the best option in GPRS/GSM networks and are widely deployed in many countries. We also rarely need any of the high-speed capabilities of the WCDMA Next G networks. The standard GPRS/GSM modem modules are now quad-band 850/1850/900/1800 and these can be used in most places worldwide, including in North America, so they are a convenient option.

The GPRS/GSM modules are also much less expensive than the newer WCDMA/Next G, but we do expect the new modems to come down in price as they become more widely deployed.

For more information on upgrading modems, contact the Unidata team.



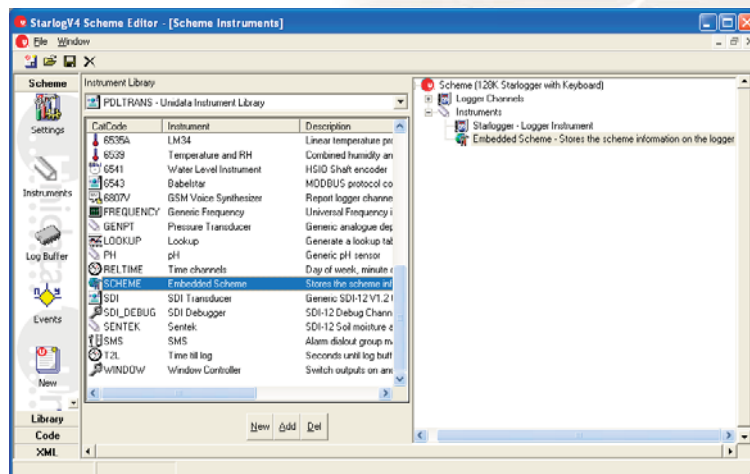
# Technical Tips

## Embedded schemes in Starlog V4

### Overview

Unidata loggers store data in a very efficient binary format, and this binary data is interpreted when viewing readings or unloading data via Starlog V4. However, you need the correct copy of the 'scheme' for Starlog V4 on the PC to interrogate the logger and view the data. Without the correct scheme you will be unable to retrieve data from the logger.

An additional complication is that if the scheme has been changed slightly then you might not be able to retrieve data from a logger with a previous version of the scheme loaded, due to differences in the data format (for example, difference in log size, log rate, scan rate etc.).



The solution is to embed the scheme information within the datalogger scheme itself. Starlog V4 will interrogate the logger for the scheme information and use this to extract data from the logger. This resolves the need for a local copy of the scheme on every PC and also addresses the problem of a scheme being changed before data is downloaded. Embedded schemes are available starting with Starlog V4 Revision 43.

### Adding embedded schemes to your logger

Embedded schemes aren't automatically added to your scheme so you must manually add this instrument to the scheme and then reprogram the logger. The procedure is as follows:

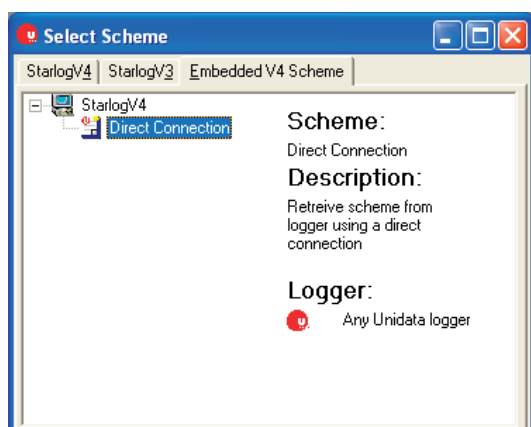
1. Run Starlog V4
2. Select the scheme to use
3. Run the Scheme Editor
4. Add the 'SCHEME' instrument from the PDLTRANS – Unidata Instrument Library. No additional configuration is required.
5. Save the scheme
6. Close the Scheme Editor
7. Reprogram the logger.

### Using embedded schemes

Each time Starlog V4 connects to a logger it checks to see if there is an embedded scheme stored on the logger. If there is an embedded scheme, then Starlog V4 will always download and use the copy on the logger. The procedure is as follows:

1. Run Starlog V4
2. Select 'Direct Connection' from the 'Embedded Schemes' tab, or else select any other scheme that utilises a direct connection
3. Start 'Test Mode' – Starlog V4 will check for an embedded scheme and use it if found. You will have full access to all Test Mode functions. Because the retrieval of scheme information requires more data transfer, it may take a little longer for Starlog V4 to display any readings.
4. Click on 'Unload' to open the Unload window. *Note that you need to start Test Mode before you can perform an Unload.*
5. Unload data as required.

**Note that because the scheme is only a summary of the data stored on the logger, you can't edit the embedded scheme.**



## Technical Tips

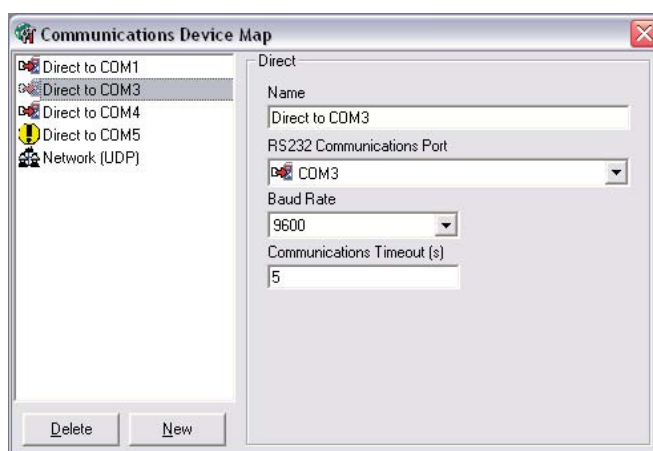
### Using USB to serial interfaces with laptop computers

Many laptops no longer have serial ports, as USB becomes more widely used. If you are communicating with loggers, using Starlog V4 or doing work on dial-up telemetry systems, you need to have serial ports available.

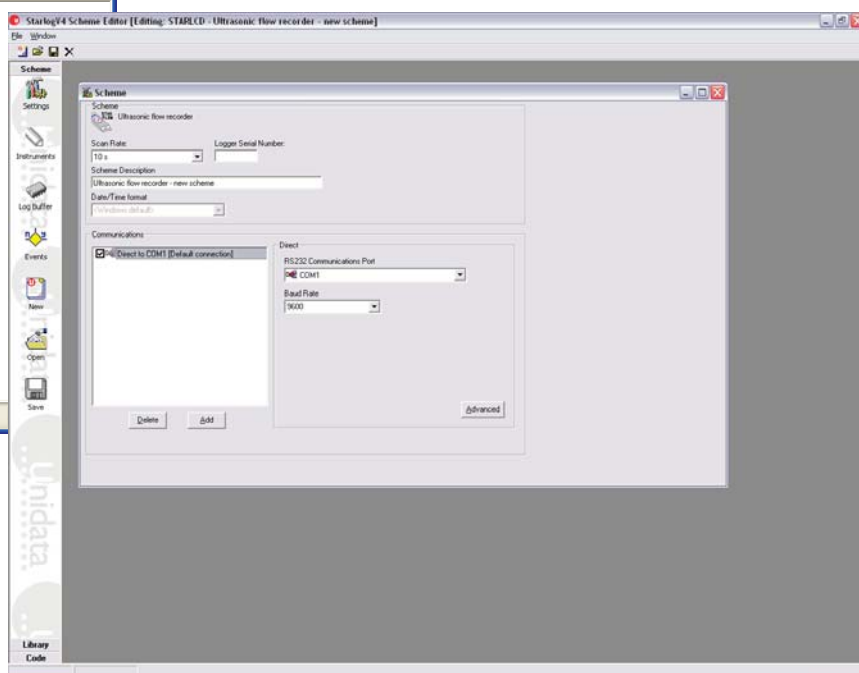
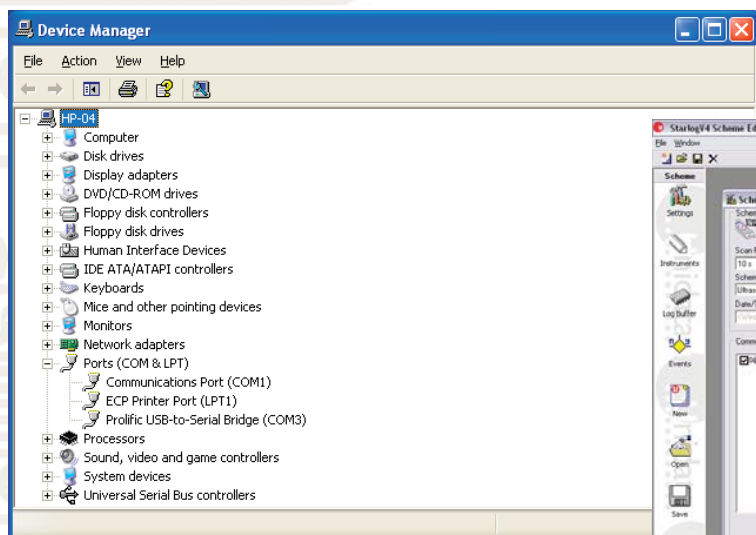
We have many enquiries about the set-up requirements for USB to serial adaptors for laptops. The procedure below may help if you are beginning to use the new USB to serial adaptors.

1. Install your USB to serial converter using the software provided. This will install the appropriate drivers for your USB to serial converter to work correctly on your PC.  
**NB:** If you do not have the software to install the appropriate drivers, your converter will not function.
2. Once the correct software has been installed you can then determine which COM port your converter has been installed on. This can be done by going to Control Panel, System, Hardware, Device Manager and then Ports.  
**NB:** The current port that the device is plugged in to will always have this COM port but if it is plugged into another USB port it will change.

3. Once you have been issued a COM port in Windows – in this case COM 3 (Prolific USB-to-Serial Bridge) – you can set up this port correctly in Starlog V4.
4. When you first open Starlog V4, go to the top tool bar and select File → Options → Communications Map. Here you can name and select the correct USB to serial COM port – COM 3 in this case.



5. If you close this window and then click on the Scheme editor icon and the Settings icon the window below, or similar, will appear:

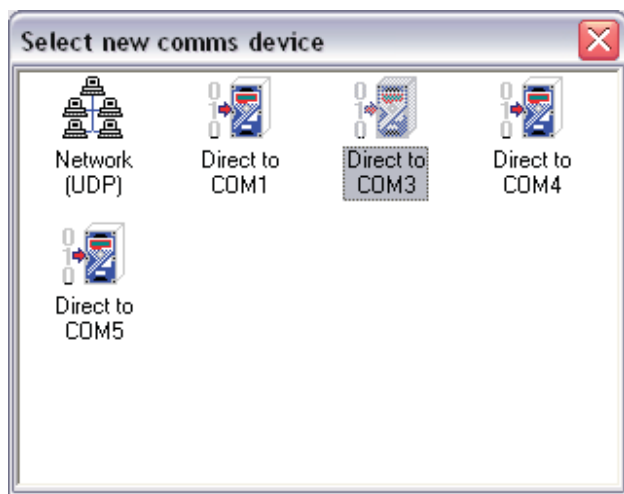


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## Technical Tips

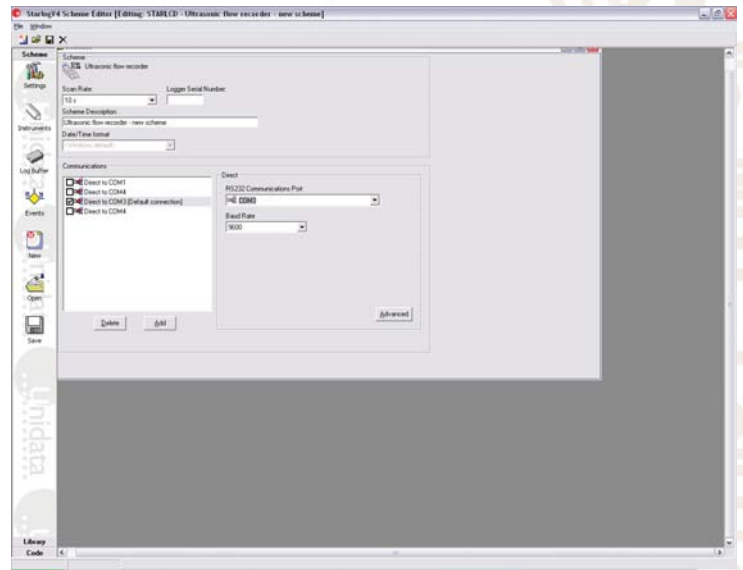
### Using USB to serial interfaces with laptop computers (continued)

6. Now click the Add button, and a window will appear with a list of COM ports. Select the correct COM port – COM 3 in this case. This will appear in the communications window. If you tick the new COM 3 box and then the save icon on the left-hand side this COM port will be saved as your default setting.



7. This will now allow you to program your logger directly using the USB to serial converter.

**NB:** You will need to save your COM port settings for each Scheme written.



## Don Bartley of Unidata

Don Bartley, the only employee of Unidata America, passed away recently. We send our condolences to Don's widow, Bonnie Bartley, and we join with many others in advising that Don was a great colleague and friend.

Unidata Pty Ltd is an Australian company, not associated with Unidata America; however Unidata America did distribute products for us. Unidata America is owned by a company based in the UK, details of which are on the Unidata America website.

In the meantime, our company in Australia, Unidata Pty Ltd, can assist with any technical or sales enquiries, and can ship Unidata products to the USA by FedEx or UPS within 24 hours for credit card sales.

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