DELTA
AUTOMATION, INC

Automation Service News

The Newsletter of Delta Automation Inc.

Tech Tip!

**Modbus Plus Traffic
Issues in Bridge Plus Devices**

Common Installation Mistakes on Modbus Plus Networks

**Delta Engineers
Discuss the Disadvantage
Of Automatic Firmware Upgrades**

Important Info

**Visit Delta Automation Inc.
at
The Richmond Industrial Show**

Delta Automation Contact Info

**Contact names, numbers and e-mail
addresses**

Tech Tip!

Modbus Plus Traffic Issues in Bridge Plus Devices

It is important to keep in mind when deciding the routing paths for your data transmissions which utilize more than one Modicon Bridge Plus device, the amount of traffic which may attempt to flow through it.

While a "backbone" of bridges on the main trunk of a Modbus Plus network is generally the most efficient design for larger systems, problems can arise when data is requested from nodes that route over more than one bridge. A bridge plus device has eight master and eight slave paths for utilization of data transmissions. Additionally, there are paths reserved for programming use only. When all of the data paths are busy in the bridge, the incoming transaction will be queued in the first bridge plus device. Once a path becomes available, the queued transaction is removed from the queue and given a path. A response is only returned to the origin when a complete path is made to the destination. Since a bridge must open ports on both sides and maintain the proper timing, a transaction will only be queued in the first bridge and **not** in subsequent bridges for transactions that utilize multiple bridges. This will result in lost data or data not getting to or from the proper nodes, with no logical indications.

Utilizing your MBPSTAT program supplied with your computer Modbus Plus network card, monitor the traffic on each side of each bridge located on your network, to determine how many paths are being utilized at one time. If traffic is indicated on all eight paths, it is possible that some messages may be queued for transmission. In fact, it has been the experience of Delta's Engineers, that if the traffic exceeds an average of about 75% (six paths), that this bridge is beginning to get overloaded and may pose future problems. The ultimate solution is to add an additional bridge in "parallel" (with different addressing of course), and re-route some of the traffic over the new bridge.

Selection #9 On the MBPSTAT menu

Here, 4 of the 8 data Paths are utilized

```
MODBUS PLUS NETWORK STATUS version 2.31
Node Transaction Counters, Press SPACE BAR to Clear Totals    Adapter: 0
                                              Success:  1001
    Information from node 10    (10.00.00.00.00)     Failure:    0
    PATH        1    2    3    4    5    6    7    8

    DM Actual   0    0    0    0    0    0    0    0
    DM Total    0    0    0    0    0    0    0    0

    DS Actual  118   73   0   175   0    0    0    0
    DS Total   516  148   0   521   0    0    0    0

    PM Actual   0    0   101   0    0    0    0    0
    PM Total    0    0    0    0    0    0    0    0

    PS Actual   0    0    0    0    0    0    0    0
    PS Total    0    0    0    0    0    0    0    0

    Station Management Input Commands Actual:      87
    Station Management Input Commands Total:      996

    Total Inbound Commands:      1185
    Total Outbound Commands:        0
```

These are the types of issues and problems that can be avoided by utilizing the network services of Delta Automation Inc. for all of your network design and support needs. A complete written report is generated with a network certification which includes distances, token rotation time, cable resistance, and a graphic display. All of this information is important for future planning for expansion, maintenance and servicing. Delta Automation Inc. certifies Modbus Plus, Modbus II and Remote I/O networks in metallic and fiber optics.

Delta Automation Inc.
Field Engineers Discuss:

The Disadvantages of Automatic Firmware Upgrades

The definition of firmware is the chip or chips containing the code (software) to determine how the equipment will function.

The manufacturer performs upgrades to the code for several reasons. Many times added functionality to a given product may require alterations to the code. Possibly, after many different applications have been installed, there are performance issues or "bugs" which can be corrected by code changes.

Today, many IT professionals adhere to the theory of always upgrading their equipments' firmware every time a new release is available. This is not necessarily the case with factory automation products. Some manufacturers upgrade the firmware each time a product is sent in for repair. The big disadvantage to this is when all like products within a given system are required to all be the same revision level to function properly. A case in point, are the redundant controllers in a hot standby system. If your system was performing as desired in your application and you experience a failure, your replacement may not function the same way, or at all, if the firmware is changed. Also in a given product which may be ten to twenty years old there are no recent upgrades.

Delta Automation, Inc. does not automatically upgrade the firmware during the repair cycle unless requested by the customer. Delta Automation, Inc. stocks all versions of a products' firmware levels. We believe that if the product was functioning properly with the present level of firmware when it failed, then repairing the product is all that is required.

Any upgrades that are safety related are conveyed to the customer, along with the system ramifications of upgrading before proceeding with the upgrade.

Important Info

Richmond Industrial Show
April 9th and 10th

Be sure to come by and visit our display !

Also, be sure to register to win the grand prize,
a DVD player.

Located at the Richmond Raceway complex
(former State Fairgrounds)

Delta Automation Contact Info

804-236-2800   **Toll free 1-888-PC-DELTA**   **fax 804-236-2900**
(888-723-3582)

Bob Culley	President	bobculley@deltaautomation.com
Margarete Culley	Vice President	mculley@deltaautomation.com
Roy Caudle	Service	roycaudle@deltaautomation.com
Bernie Wieland	Sales	berniewieland@deltaautomation.com
Clark Jones	Sales	clarkjones@deltaautomation.com
Kevin Knecht	Outside Sales	kevink@deltaautomation.com
Mike Martinelli	Repair	marti@deltaautomation.com
Theresa Umbel	Accounting	plc@deltaautomation.com

For after hours

Emergency Service or Parts
Call our main number 888-723-3582

Extension 55

Leave a message and someone will respond within fifteen minutes to answer your call.
www.deltaautomation.com
2704 Charles City Road Richmond, VA. 23231