How to setup a redundant system with Ethernet I/O?

Download FAQ-062 Demo.

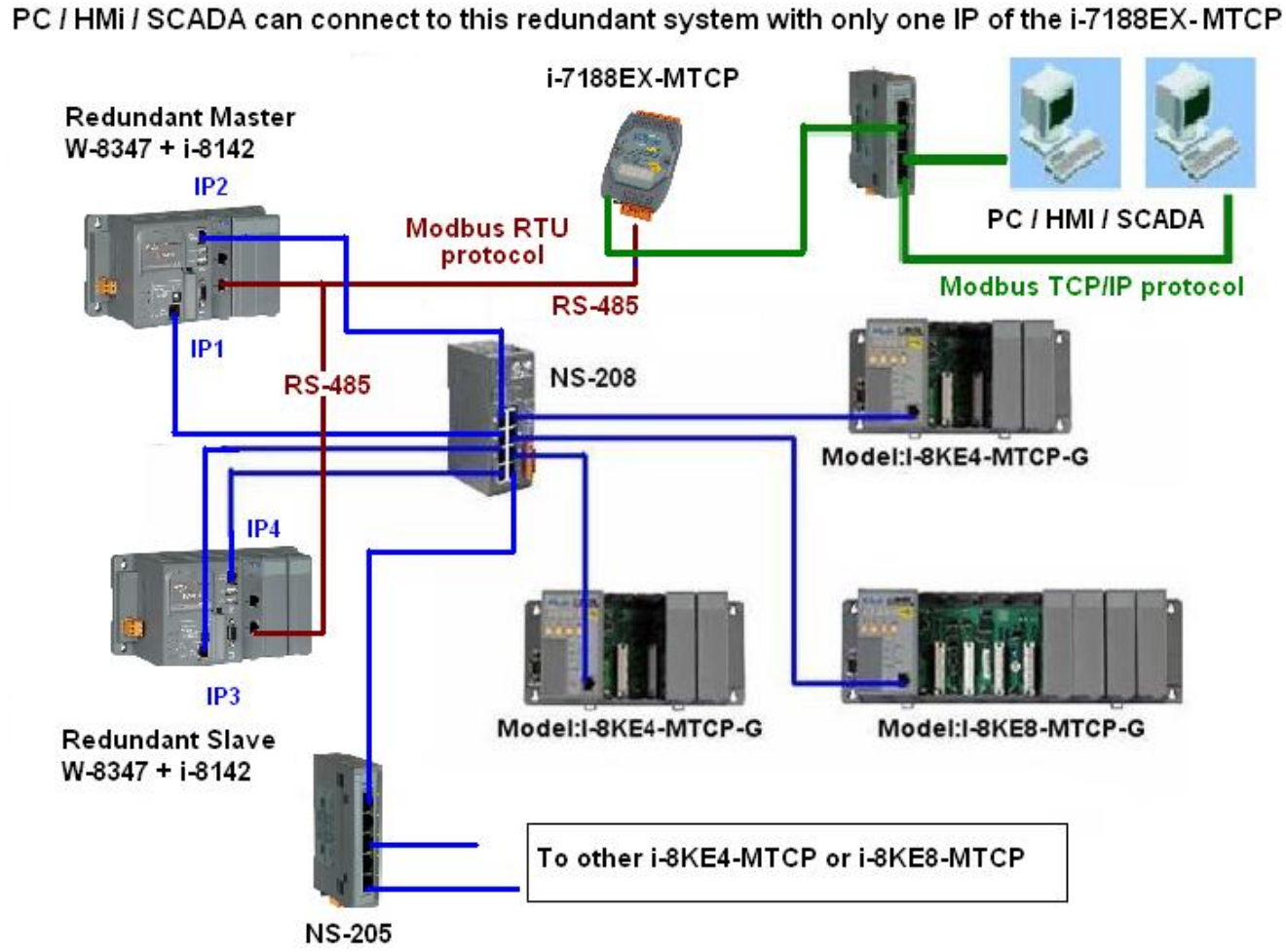
WinCon-8347 and WinCon-8747 have been phased out, you can also use ISaGRAF XPAC (xpdmo72c) to setup a redundant system with Ethernet I/O. In this example, the demo program "wdemo_57.pia" can be downloaded at http://www.icpdas.com/en/faq/index.php?kind=280#751 - FAQ-062.

ISaGRAF Demo:
http://www.icpdas.com/en/download/show.php?num=1005&nation=US&kind1=&model=&kw=isagraf

Please refer to Section 22.2 of ISaGRAF user manual to configure the Ethernet I/O – I-8KE4-MTCP and I-8KE8-MTCP by "Modbus Utility" first. It is better to enable the watchdog timer larger than **12** seconds. After all Ethernet I/O's IP and configuration are configured well, please connect them as below. Then download the ISaGRAF program "wdemo_57" to both "redundant Master" and "redundant Slave" PACs.

The advantage is

1. The scan of the Ethernet I/O is much faster compared to the RS-485 I-7000 or I-87K I/O.
2. If one Ethernet cable is break or damaged, the other one will still handle the Ethernet I/O and exchange data with the other redundant PAC.



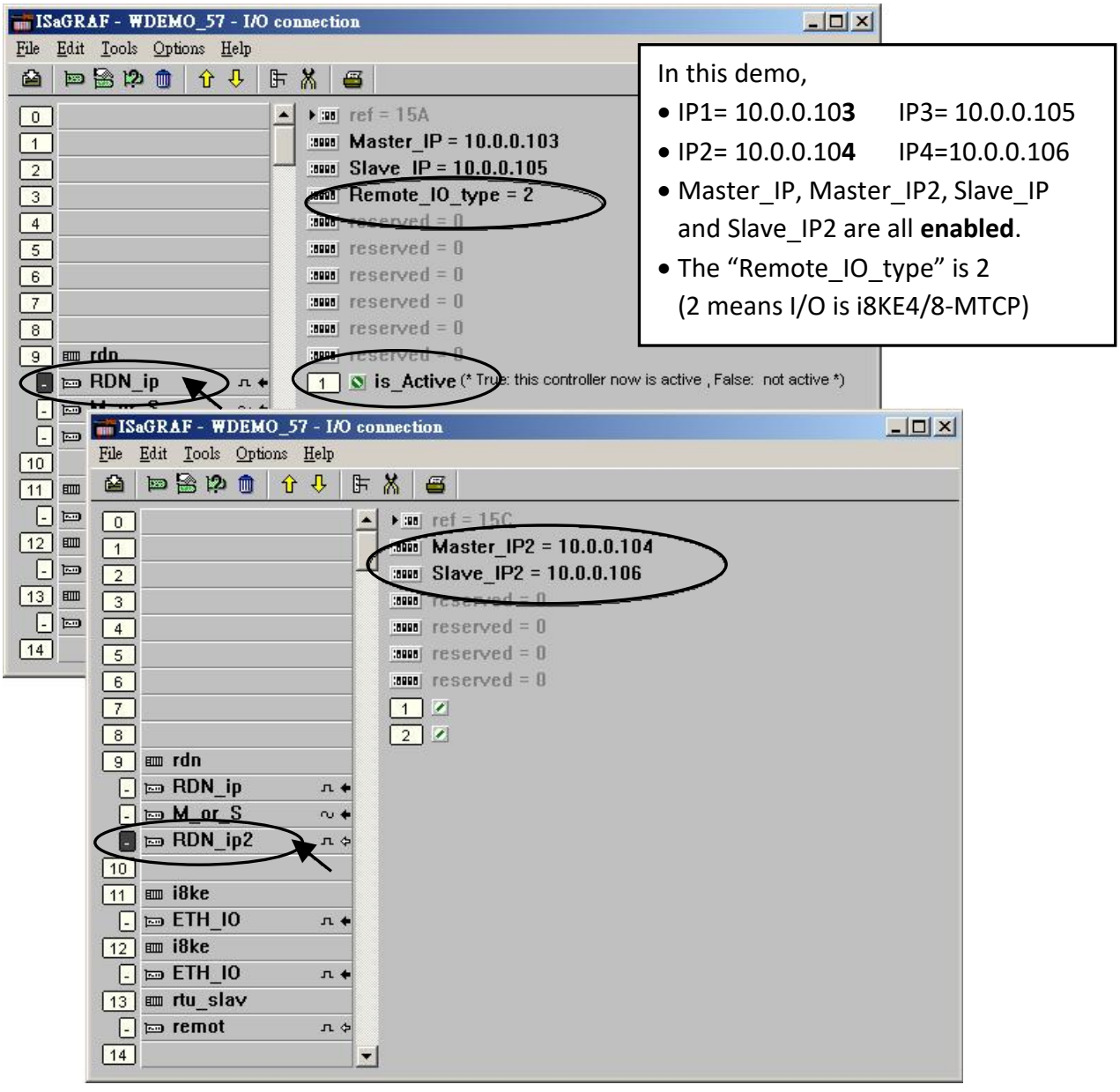
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Refer to Chapter 20 of ISaGRAF user manual for more information about Redundant Solutions.

Related link:

I-7188EX-MTCP	http://www.icpdas.com/en/product/I-7188EX-MTCP
NS-205/NS-208	http://www.icpdas.com/en/product/guide+Industrial__Communication+Ethernet__Communication+Ethernet__Switch
I-8142/I-8144	http://www.icpdas.com/en/product/guide+Remote__I_O__Module__and__Unit+PAC__%EF%BC%86amp;__Local__I_O__Modules+I-8K_I-87K__Series__(High__Profile)#481

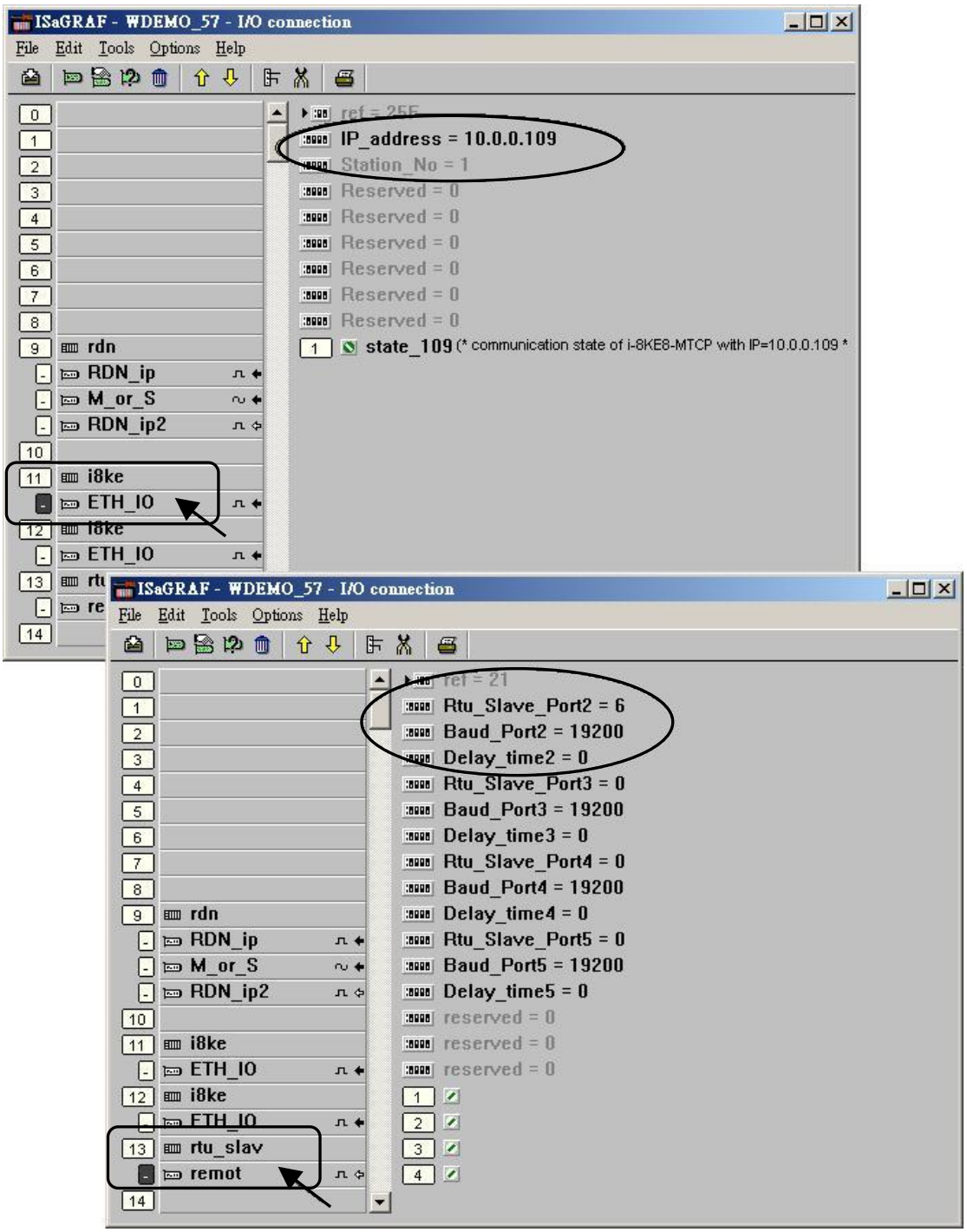
In this "wdemo_57" demo, the ISaGRAF I/O connection window is as below. Refer to ISaGRAF Appendix F or any getting started manual to enable LAN2 of ISaGRAF PAC.
http://www.icpdas.com/en/download/index.php?nation=US&kind1=&model=&kw=isagraf



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There are two I-8KE8-MTCP Ethernet I/O used in this demo program. One is with IP = 10.0.0.109. The other one is 10.0.0.110. If your application has more I-8KE4/8-MTCP, you should connect more **"i8ke"** in the IO connection windows. Please refer to Chapter 22 of ISaGRAF user manual for more information about Ethernet I/O.

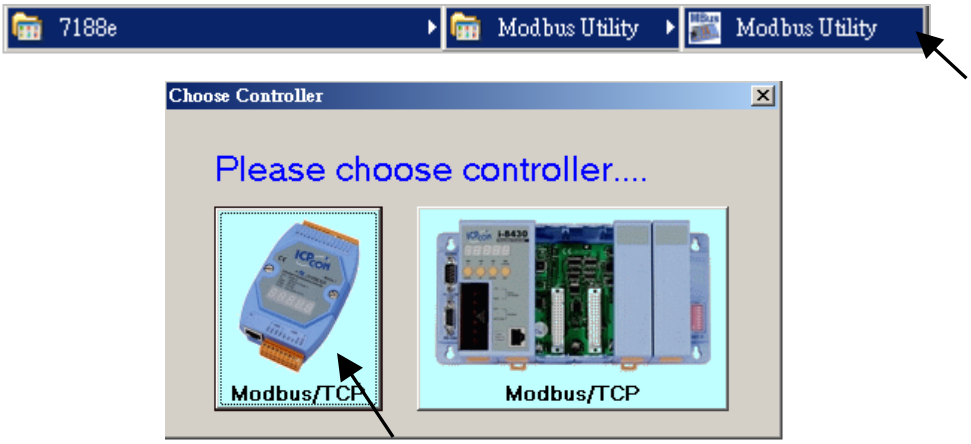
The **"rtu_slav"** is to enable Wincon-8xx7's COM5 to COM8 as Modbus RTU slave port. Here we enable only COM6 in this example. (Refer to the manual for ISaGRAF PAC to setup expansion COM port and then the COM5 to COM14 on the I-8142/8144 expansion board can be used.)



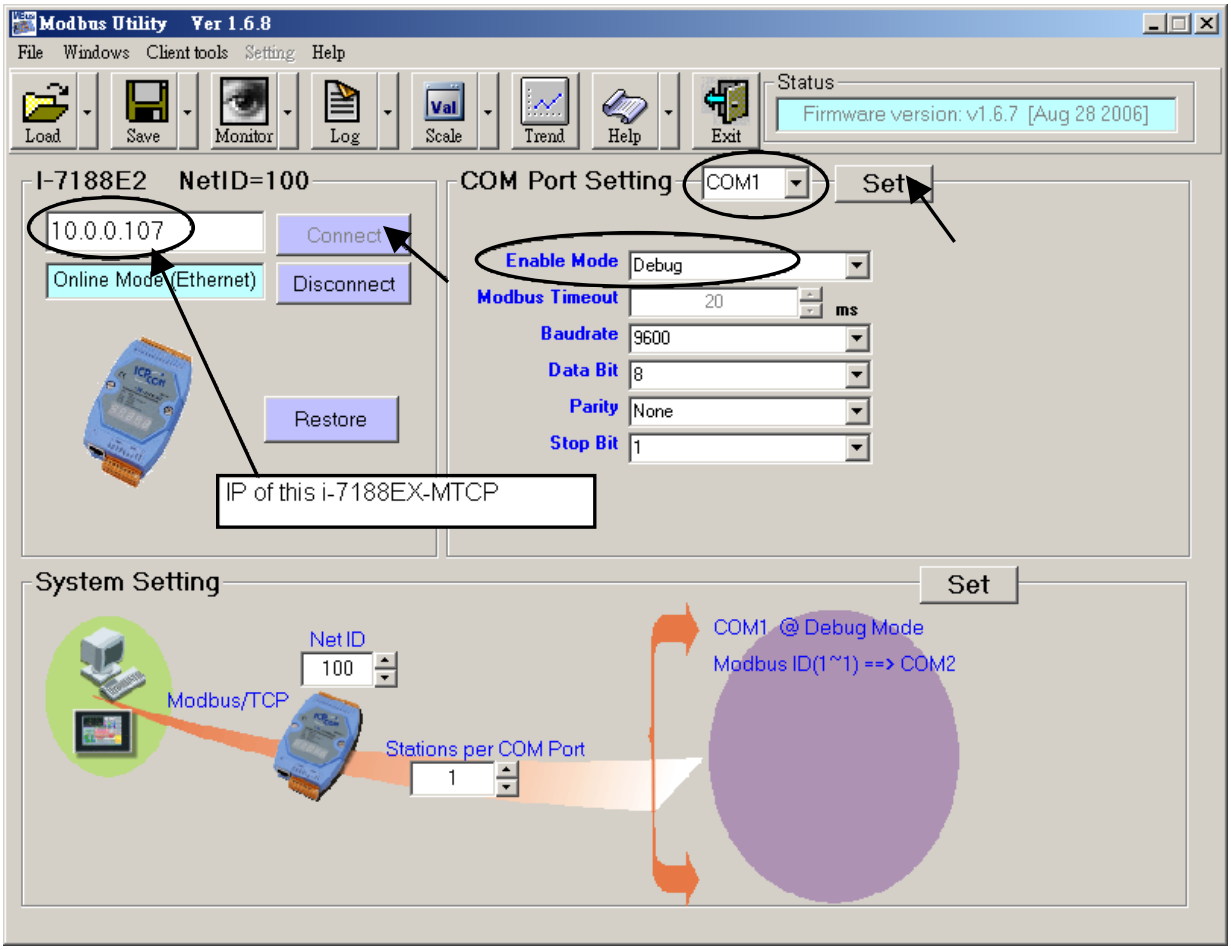
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If you have installed I-7188EX-MTCP in this example, please set a fixed IP to it by the “7188xw.exe” utility. (Power off I-7188EX-MTCP, short its “INIT*” pin to “GND”, power it up, connecting one RS232 cable from I-7188EX-MTCP‘s COM1 to PC‘s COM1, PC running “7188xw.exe”, key-in “ip=10.0.0.107” to set ip address and “mask=255.255.255.0” to set mask address)

After I-7188EX-MTCP’s IP and Mask is well set. Please run “Modbus Utility” to configure this I-7188EX-MTCP to become a Modbus TCP/IP to Modbus RTU Gateway as below steps.



Please set its COM1 as “Debug” mode.



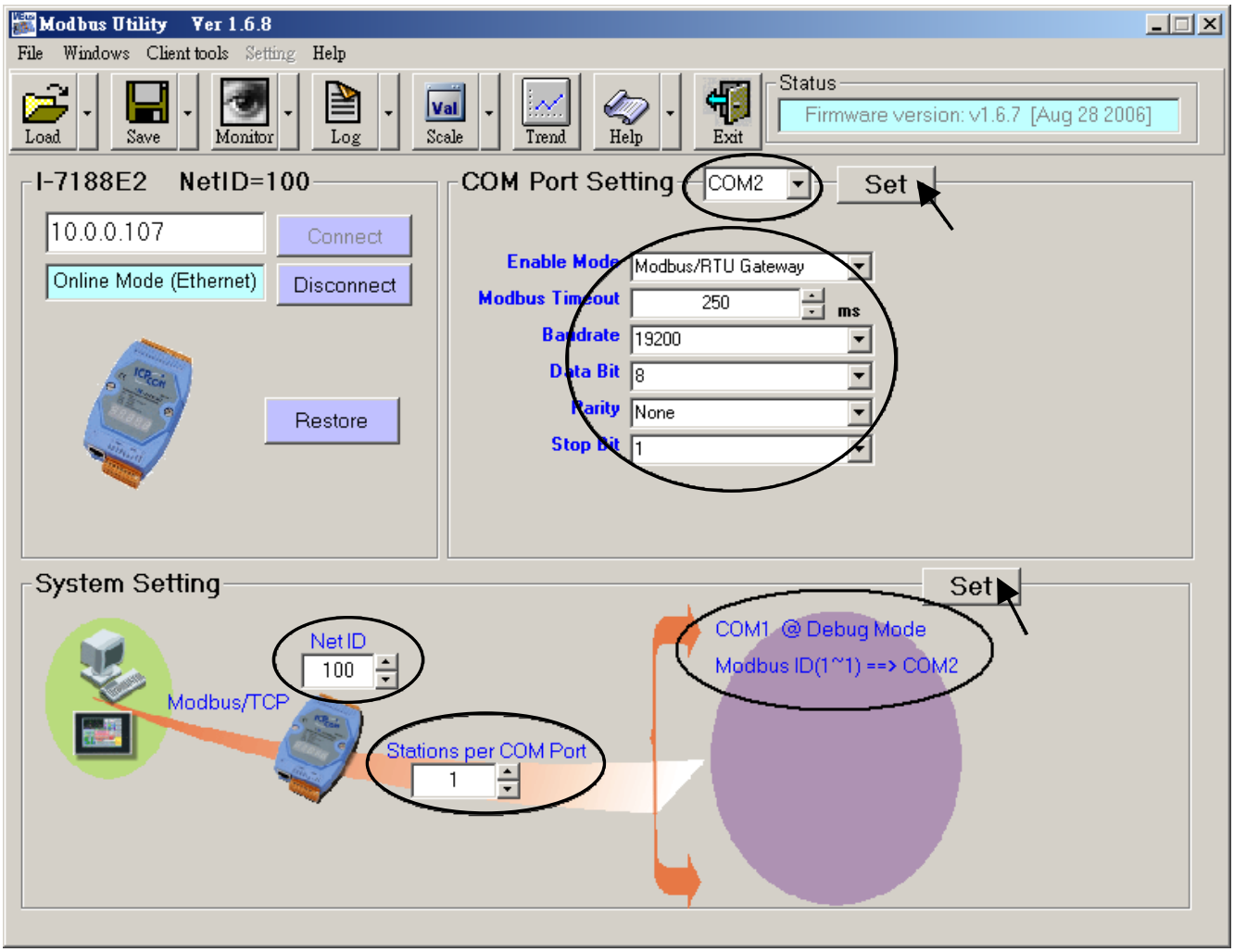
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Then please set COM2 to “Modbus/RTU Gateway”, a proper timeout (250 ms), other parameters as 19200, 8, None, 1 . then Click on “Set”.

In the “System Setting” area, please set this I-7188EX-MTCP ‘s Net-ID to a value not equal to 1, for example, 100. And “Stations per COM Port as 1”, then click on “Set”. If it display **“Modbus ID (1 ~ 1) ==> COM2”**, the configuration is well done.

Note: If I-7188EX-MTCP‘s COM1 is not set as “Debug” mode in the former page, the setting will become “**Modbus ID (1 ~ 1) ==> COM1**”. That is not correct, because here we want it send to I-7188EX-MTCP‘s COM2: RS-485.

Then when this I-7188EX-MTCP receives Modbus TCP/IP protocol to request Net-ID: 1, it will send this request to its COM2: RS-485. And then if Wincon-8347 reply, it will reply back to the Ethernet port.



Click the link for more ISaGRAF FAQ:
http://www.icpdas.com/en/faq/index.php?kind=280#751

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