

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

The Wincon-8347 and Wincon-8747 can setup a redundant system with Ethernet I/O as below. The demo program is “wdemo_57.pia” at

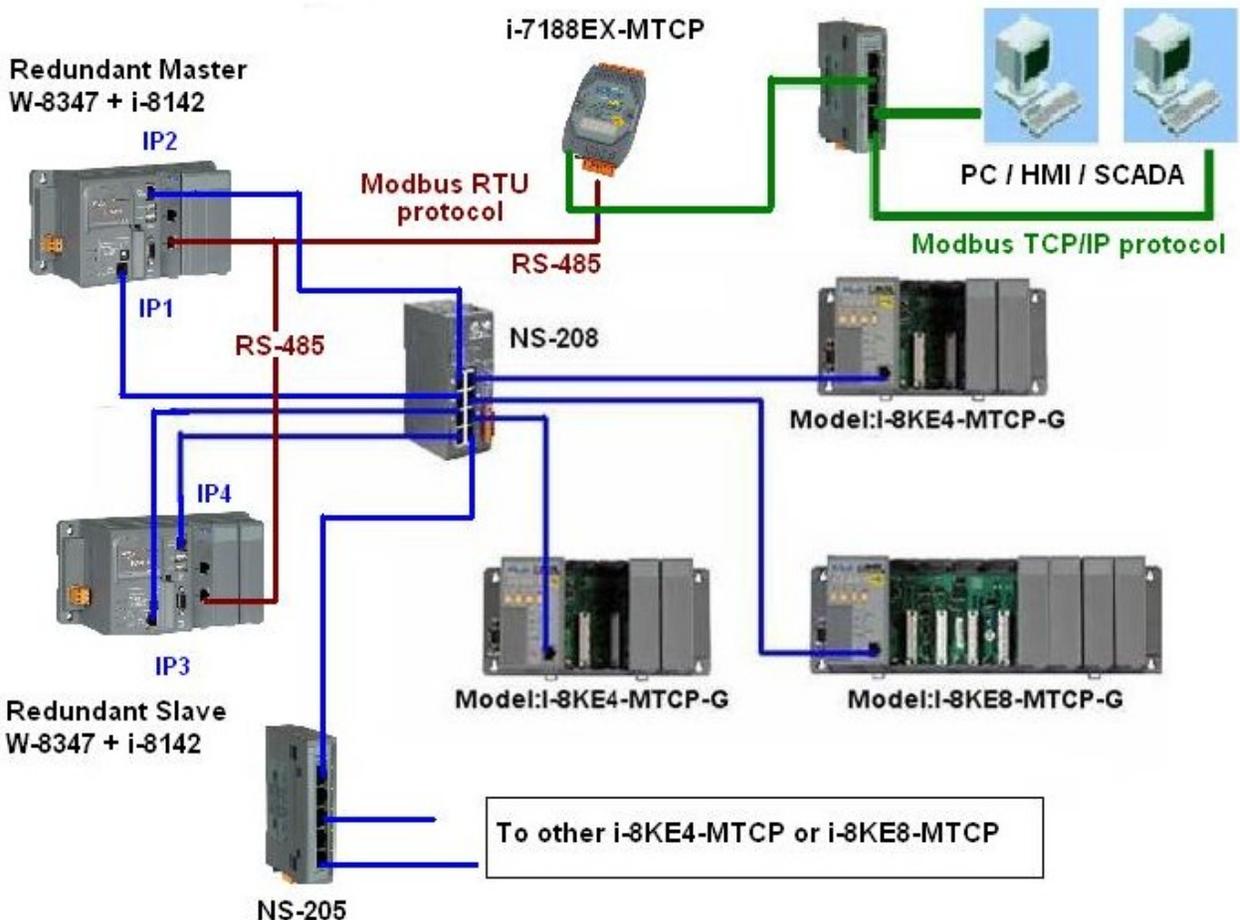
W-8xx7 CD-ROM: \napdos\isagraf\wincon\demo\ or
ftp://ftp.icpdas.com/pub/cd/wincon_isagraf/napdos/isagraf/wincon/demo/ or
www.icpdas.com – FAQ – Software – ISaGRAF - 062

Please refer to Chapter 22.2 to configure the Ethernet I/O – i8KE4-MTCP and i8KE8-MTCP by “Modbus utility” first or refer to FAQ-042. (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” controllers .

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 controller.

PC / HMI / SCADA can connect to this redundant system with only one IP of the i-7188EX-MTCP



Wincon-8347 redundant system can connect max. 24 nodes of i-8KE4/8-MTCP I/O

Please refer to Chapter 20 for more information about the Wincon redundant system. Or refer to www.icpdas.com – FAQ – Software – ISaGRAF – 036)

Related link:

I-7188EX-MTCP : http://www.icpdas.com/products/PAC/i-7188_7186/Modbus_PAC.htm

NS-205 / NS-208 : http://www.icpdas.com/products/Switch/industrial/ethernet_switch.htm

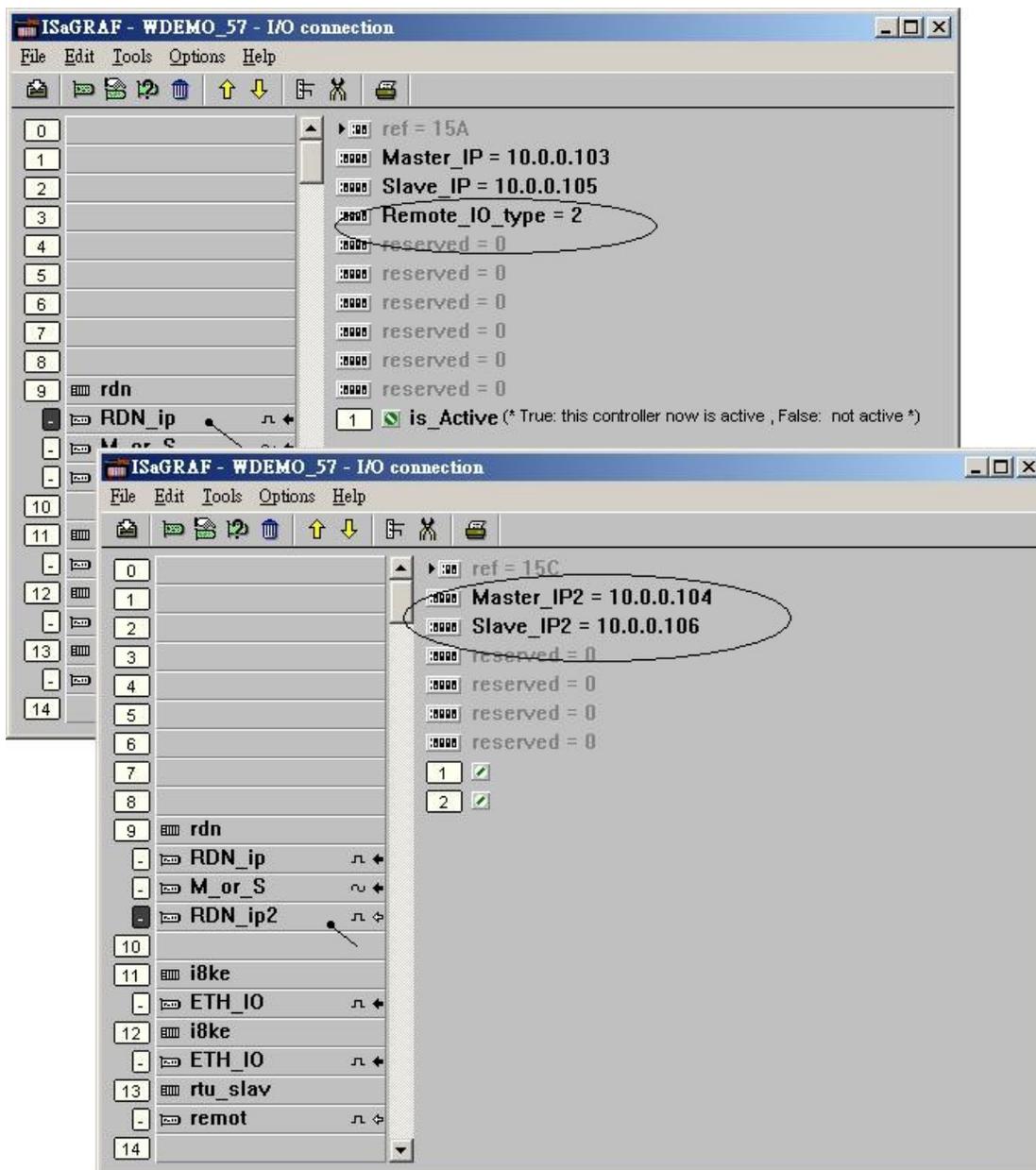
i-8142 / 8144: http://www.icpdas.com/products/PAC/i-8000/8000_IO_modules.htm

In this “wdemo_57” demo, the ISaGRAF I/O connection window is as below.

(IP1 is 10.0.0.103 , IP2=10.0.0.104, IP3=10.0.0.105 and IP4=10.0.0.106 in this demo)

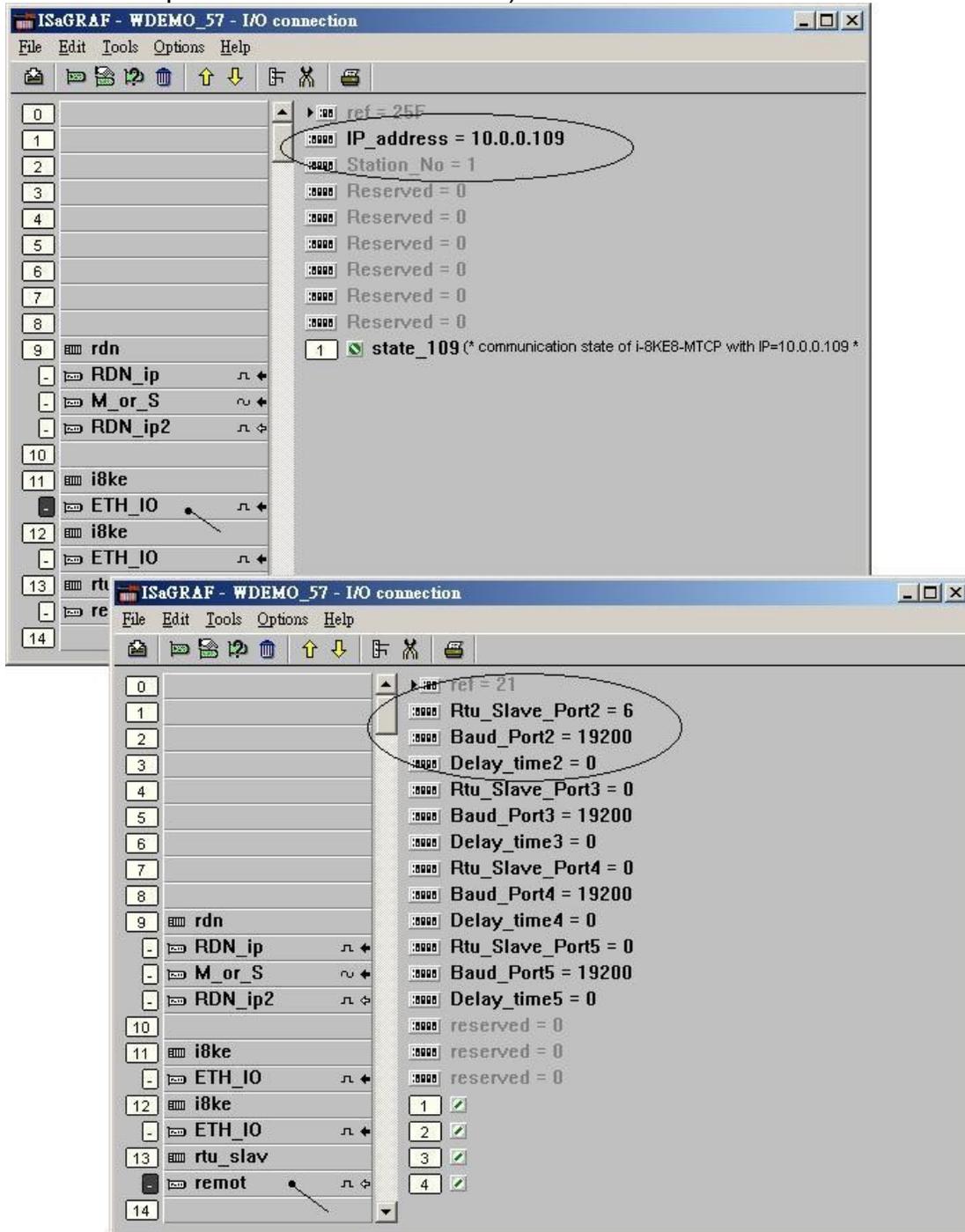
Master_IP , Master_IP2 , Slave_IP and Slave_IP2 are all enabled. (Please refer to Appendix F or Appendix D of W-8xx7 “Getting Started Manual” to enable W-8347 ’s LAN2)

The “Remote_IO_type” is 2 (2 means I/O is i8KE4/8-MTCP)



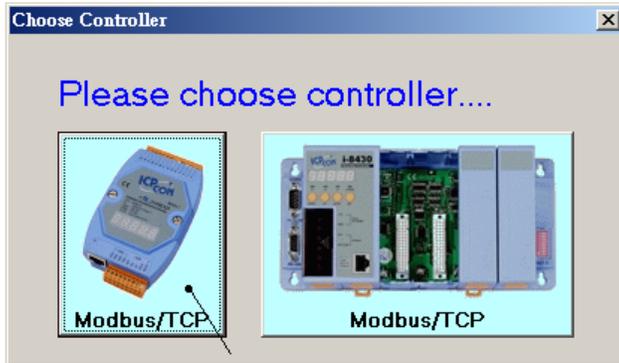
There are two i8KE8-MTCP Ethernet I/O used in this demo program. One is with IP = 10.0.0.109. The other one is 10.0.0.110. If your application has more i8KE4/8-MTCP, you should connect more “i8ke” in the IO connection windows. Please refer to Chapter 22 for more information about Ethernet I/O. (FAQ-042)

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. (**Please refer to Appendix E of the Wincon ISaGRAF Getting Started Manual to setup expansion COM port first** . That is COM5 to COM14 in the expansion i-8142/8144 board)

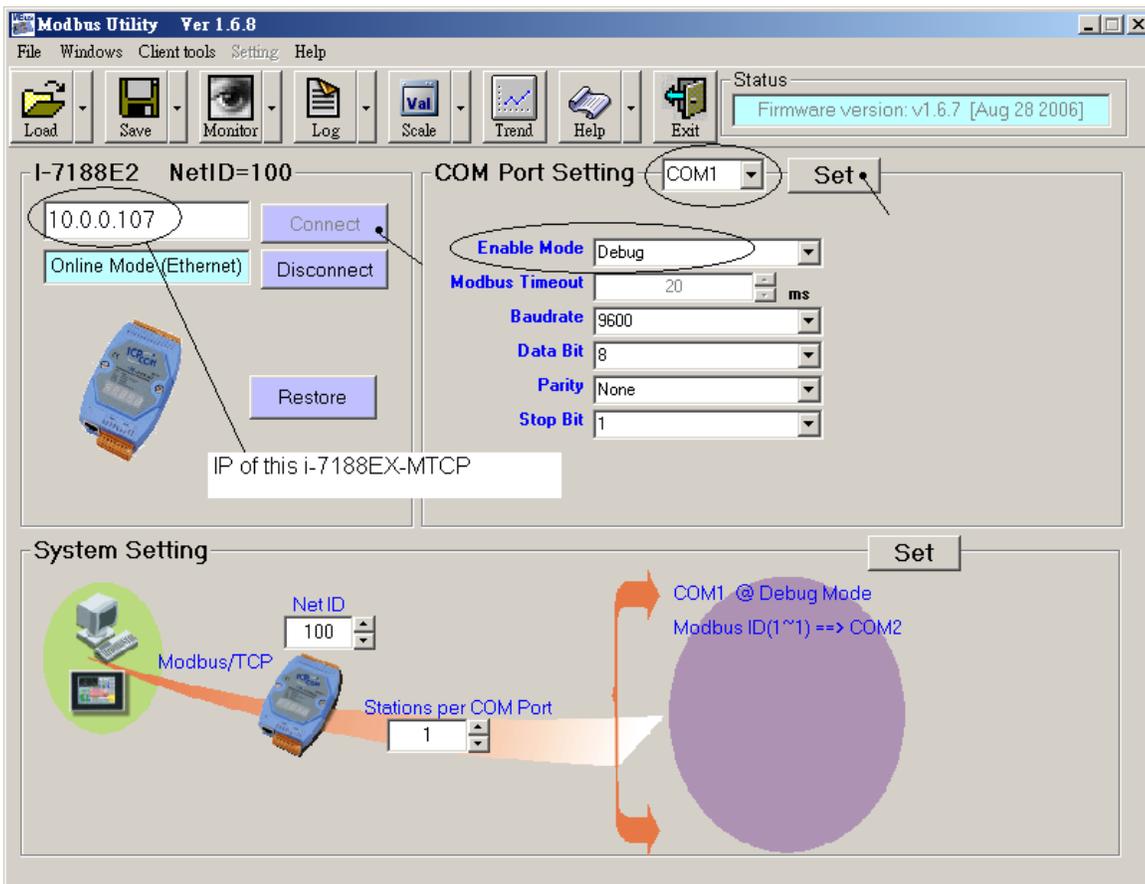


If you have installed i-7188EX-MTCP in this example, please set a fixed IP to it by the "7188xw.exe" utility. (Power off 7188EX-MTCP, short its "INIT*" pin to "GND", power it up, connecting one RS232 cable from i-7188EX-MTCP 's COM1 to PC 's COM1, PC running "7188xw.exe", key-in "ip=10.0.0.107" to set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



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.

