WiPort/WiBox Modbus
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The Modbus Master/Slave functionality on the WiPort and WiBox is very similar to the Modbus implementation on other platforms such as the XPort, NET232 or NET485. The major difference is that the configurable pins on the WiPort (CP0-CP10) and the WiFi settings on the WiPort/WiBox can be configured from the setup menu.

The WiPort/WiBox is a 2 serial port device and you can choose which serial port the firmware uses for sending and receiving Modbus/RTU or Modbus/ASCII serial data under the "**Serial & Mode Settings**" menu option. Channel 1 on WiBox only supports RS232 while channel 2 supports RS232 and RS422/RS485 2/4-Wire modes.

Use serial connector (1=CH1 2=CH2) (1) ?

The menu option for "**Modem Control Settings**" has been replaced with "**Modem/Configurable Pin Settings**" on the WiPort. The options are as follows:

```
CP0 Function (hit space to toggle) GPIO (In)
CP0 Function (hit space to toggle) GPIO (Out)
CP0 Function (hit space to toggle) DTR (Out)
CP0 Function (hit space to toggle) Diag LED
CP0 Function (hit space to toggle) Status LED-G
CP0 Function (hit space to toggle) Status LED-Y
CP0 Function (hit space to toggle) RS485 Select
CP0 Function (hit space to toggle) RS485 2-Wire
CP0 Function (hit space to toggle) RS485 4-Wire
CP0 Function (hit space to toggle) Defaults(In)
```

The assignment for each configurable pin is set by cycling through the menu options by entering a space or any key other than <enter>. GPIO assigns the pin as a general purpose input or output. The GPIOs can be written and read via Modbus/TCP when in slave attached mode. DTR is the modem control output (MCO) signal for Data Terminal Ready. Diag LED, Status LED-G and Status LED-Y are the outputs for diagnostic LED (red), green status LED and the yellow status LED. RS485 Select is an output made active when configuring the serial channel for RS422/485 operation. RS485 2-Wire and 4-Wire are outputs made active when configuring RS422/485 2-Wire or 4-Wire operation respectively. Defaults are an input read at startup that tells the firmware to reset configuration to factory defaults. After assigning

the applicable function by pressing <enter> you are then asked if the pin is inverted (active low).

CP0 Function (hit space to toggle) GPIO (In)   Invert (active low) (Y) ?

A function should be assigned to each configurable pin. GPIO (Input) should be the default for all unused or unassigned pins.

CP0 Function (hit space to toggle) RS485 Select Invert (active low) (Y) ?
CP1 Function (hit space to toggle) RS485 2-Wire Invert (active low) (Y) ?
CP2 Function (hit space to toggle) GPIO (In)   Invert (active low) (N) ?
CP3 Function (hit space to toggle) GPIO (In)   Invert (active low) (N) ?
CP4 Function (hit space to toggle) GPIO (In)   Invert (active low) (N) ?
CP5 Function (hit space to toggle) Diag LED   Invert (active low) (N) ?
CP6 Function (hit space to toggle) Status LED-G Invert (active low) (N) ?
CP7 Function (hit space to toggle) Status LED-Y Invert (active low) (N) ?
CP8 Function (hit space to toggle) GPIO (In)   Invert (active low) (N) ?
CP9 Function (hit space to toggle) GPIO (In)   Invert (active low) (N) ?
CP10 Function (hit space to toggle) GPIO (Out)   Invert (active low) (N) ?

After all the configurable pins have been assigned, the standard modem control settings can be entered if applicable.

RTS/CTS Mode (1=Fixed 2=Variable) (1) ?

The setting for each configurable pin is displayed in the setup menu.

Modbus/TCP to RTU Bridge Setup
1) Network/IP Settings:
    IP Address 192.168.0.2
    Default Gateway .... --- not set ---
    Netmask .... --- not set ---
2) Serial & Mode Settings:
    Protocol .... Modbus/RTU,Slave(s) attached
    Serial Interface 9600,8,N,1,RS232,CH1
3) Modem/Configurable Pin Settings:
    CP0..!RS485 Select CP1..!RS485 2-Wire CP2.. GPIO (In)
    CP3.. GPIO (In)   CP4.. GPIO (In)   CP5.. Diag LED
    CP6.. Status LED-G CP7.. Status LED-Y CP8.. GPIO (In)
    CP9.. GPIO (In)   CP10. GPIO (Out)
    RTS Output .... Fixed High/Active
4) Advanced Modbus Protocol settings:
    Slave Addr/Unit Id Source .. Modbus/TCP header
    Modbus Serial Broadcasts ... Disabled (Id=0 auto-mapped to 1)
    Local Slave Addr for GPIO .. 003 mapped to 0x/1x00100-00110
    MB/TCP Exception Codes ..... Yes (return 00AH and 00BH)
    Char, Message Timeout 00050msec, 05000msec
6) WLAN Settings:
    WLAN .... Enabled, network:LTRX_IBSS
    Topology .... AdHoc, Country: US, Channel: 11
    Security .... none
    Data rate .... 11 Mbps auto
    Power management .... not supported in adhoc mode

The menu option for "**WLAN Settings**" has been added to configure the WiFi parameters of the WiPort/WiBox.

Two new parameters were added under the menu option "**Advanced Modbus Protocol Settings**" on WiPort. The Modbus slave address and starting offset parameters are used to direct *Read Coil Status*, *Read Input Status*, *Force Single Coil* and *Force Multiple Coils* Modbus commands to the WiPort's GPIO. Other commands or unmatched addressing are directed to the serial port.

```
Local slave address for GPIO (0 to disable, or 1..255) (0) ? 3
Starting offset (0H/1x0001..9999) (1) 100
                :

4) Advanced Modbus Protocol settings:
                :
    Local Slave Addr for GPIO .. 003 mapped to 0x/1x00100-00110
```