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Setup and Operation Notes for the DIG-2410 Wireless Modem MultiLogger Application Note #6

Overview:

The DIG-2410 provides a wireless link between a computer and a Campbell Scientific Inc. datalogger. The system is configured for operation as it ships from the factory. This document will serve as an addition to the WIT2410 Integration Guide.

Connections:

The base station, packaged in a black plastic case, should be connected to the serial port of the computer with a standard 9-pin RS232 cable. The 100-240VAC to 5VDC converter should be plugged into an AC outlet and to the DC IN port on the back of the unit.

The remote, packaged in a white plastic box, should be connected directly to the CR10 wiring panel with the supplied CSI serial cable (blue, 9 conductor flat cable). No power connection is necessary as the unit draws power from the five volt line of the serial buss.

The omni-directional antenna (black, one inch diameter rod) should be connected to the base station and mounted vertically. The Yagi directional (white, four by one inch rectangle) should be connected to the remote. The Yagi should be mounted parallel to the ground with the non-mounting end pointed toward the base station's antenna. Maximum range can be attained if the antennae are in a "line of sight" configuration, that is, there are no obstructions between the two.

Configuration:

To use either PC208W from Campbell Scientific or Canary Systems' MultiLogger there needs to be a Generic Modem configured as the link between COM1 and the CR10X. This Generic modem must be configured as: "Make RTS Active" and "Make DTR Active" and the baud rate should be 9600. In PC208W this is done in the Setup screen and in MultiLogger in the Datalogger Network and Configuration Manager. The time necessary to establish the communications link could be as long as 15 seconds due to the link up process between the radios.

The factory defaults are used for all but two configurable parameters. For maximum power savings the parameter **zp** (Set Duty Cycle) has been set to a value of 5 in the remote. This causes the remote to wake up every 32 hops or about every 320 milliseconds to scan for a signal from the base station. For the same reason parameter **zq** (Enable Low Power Acquisition Mode) has been set to 1 or enabled. The Integration Guide provides information on the rest of the commands possible through WinCom24. Please read the instruction(s) carefully before altering the settings.

If the user finds it necessary to reconfigure the module(s) it will be necessary to install the software package WinCom24 on the computer. Place the diskette in the a: drive and click on RUN from the Start menu and enter a:setup. Follow the instructions on the screen. After installation is complete use Explore to create a shortcut to WinCom24. In explorer go to the wincom24 directory and right click on the file wincom24.exe. In the pop-up menu select Create Shortcut. When the shortcut appears in the list click and drag it onto the desktop. Now double click the shortcut icon to start WinCom24. It is used to modify the configuration of the units. The base station can be accessed by WinCom24 if it is connected as

described above. The remote unit has no internal circuitry for RS232 (serial) communication and will have to use the base station circuitry in order to be accessed by WinCom24.

The following steps describe how to connect the remote radio module to the computer:

- 1) Remove the remote enclosure's cover by loosening the four plastic screws in the lid.
- 2) Turn the base station power switch off and disconnect the converter.
- 3) Remove the base station's cover by gently prying out and lifting up one of the edges from the base. Lift the cover far enough for the edge to clear the end pieces of the base and this will allow you to remove it.
- 4) Unplug the grey flat cable in the base station from the radio module (the 1 3/4 by 3" silver "box"). Note that the red edge of the cable is toward the outside of the module.
- 5) Unplug the grey flat cable in the remote from the radio module. The orientation is the same as described above.
- 6) Plug the cable from the base station into the remote's module. BE VERY CAREFUL to seat the cable connector properly on the pins on the circuit board.
- 7) Turn the power switch on and start WinCom24 on the computer. See Section 6.1 of the WIT2410 manual for more information on WinCom24 operation.

Operation:

No special operating procedures are necessary when using the radio modem. PC208W and/or MultiLogger must be configured as described in the first paragraph of the **Configuration** section above. All of the functions of either program will operate as if directly connected except for a slightly longer delay when the connection is first made.

Power Usage:

With the power saving configuration settings mentioned above the measured current drain is about 25mA.