How to integrate the Vaisala WXT510/520 and the Septentrio PolaRx5 (Command Line)

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Configuring the Vaisala WXT510/520 Weather Transmitter

There are two ways to configure the Vaisala WXT510/520 Weather Transmitter:

1. Use the Vaisala configuration software and service cable; load the UNAVCO configuration file located at: /questions/306/Vaisala+WTX-510%7B47%7D520+config+file+ .

OR

1. Use hyper terminal (or any other terminal emulation program) to configure the Vaisala WXT510/520 manually.

To configure the Vaisala using a terminal emulation program:

1. Connect to the Vaisala using the following settings:
    - Baud: 19200
    - Parity: None
    - Flow Control: None
    - Edit the hyper terminal ASCII settings:
        - check box for "send line ends for line feed"
        - check box for "Echo typed characters locally"
        - check box for "Append line feed to incoming line ends"
2. With the terminal connection established, power up the Vaisala. You should get a "0X0, start" message.
3. Use the following commands to configure the WXT510/520:
    - 0XU,M=Q,C=2 (This should set the WXT510 to NMEA polled, RS232 communication)
    - 0TU,R=&11010000,I=180,P=B,T=C (This should set the pressure units to bar and temperature to Celsius)
    - 0RU,R=&10000000U=M,Z=A (This sets the precipitation units to mm/hr and counter reset)
    - 0WU,R=&01001000 (These next two commands sets wind averaging, units, and output values)
    - 0WU, I=180,A=180,U=M,F=1
    - 0SU,R=&00000000 (This removes the system status elements from the output values)
    - 0XU,M=P (to change the communication protocol back to ASCII)

1. Verify the Vaisala is enabled:
    - Issue a "0R0" command.
    - The met pack is set to output the following string:

      0R0,Dm=076D,Sm=0.1M,Ta=24.4C,Ua=20.9P,Pa=0.8429B,Rc=0.00M,Hc=0.0M

      where:

      0R0 - the command that is sent
      Dm - wind direction, degrees
      Sm - wind speed, m/s
      Ta - temperature, degree C
      Ua - humidity, percent
      Pa - barometric pressure, Bar
      Rc - rainfall, mm/sampling period (reset at each measurement)
      Hc - hail, hits/sampling period (reset at each measurement)

Configuring the Septentrio PolaRx5

Configuring the PolaRx5 using a telnet connection

- Connect to the receiver (default command port: 28784)
    - telnet ip_address port_number
- Login to the receiver
    - login, username, password
- Setup the serial port (in this example the met device is connected to COM2)
    - scs, COM2, baud19200, bits8, No, bit1, none
- Enable a periodic ASCII command to be sent to the met device (%%CR and %%LF correctly terminate the ’0R0’ command sent the the device)
    - spe, COM2, A:0R0%%CR%%LF, min5

- Enable the receiver to accept the met device's ASCII input
    - sdio, COM2, ASCIIIn
- Add the ASCIIIn to the desired SBF logging stream
    - sso, Stream#, LOG#, +ASCIIIn,
- Save the new configuration settings to Boot
    - eccf, Current, Boot

Using teqc to extract met records

Use the following command to create a met file:

teqc +met <filename>.met -M.obs pr+td+hr+ws+wd+ri+hi <filename>.sbf > <filename>.obs

where <filename>.sbf is the binary file that you pulled from the receiver,

and

<filename>.met is the ASCII file that contains the extracted met data,

and

<filename>.obs is the RINEX observation file extracted from the SBF file.

Online URL:
https://kb.unavco.org/article/how-to-integrate-the-vaisala-wxt510-520-and-the-septentrio-polarx5-command-line-840.html