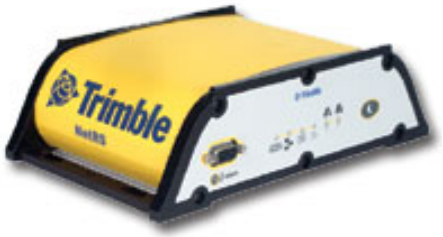
Vaisala - How to integrate the Vaisala WXT510/520 with the Trimble NetRS/NetR9

411 Jim Normandeau April 1, 2021 Vaisala 4482

How to integrate the Vaisala WXT510/520/530 and the Trimble NetRS/NetR9





Configuring the Vaisala WXT510/520/530 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 NetRS/NetR9

Configure the NetRS as follows:

- I/O Configuration
    - Serial Port 2 Configuration
        - Service: Met-Tilt

Baud: 19200
Parity: None
Flow Control: None

Parameters for Met-Tilt mode:

Command 0R0
Schedule set to desired sample interval

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.dat > $filename.obs

where $filename.dat is the file you've created using the .T00 file you pulled from the receiver.

Alternatively, if you are collecting BNX data, use:

teqc +met $filename.met -M.obs pr+td+hr+ws+wd+ri+hi -binex $filename.BNX > $filename.obs

jn2021

Online URL:
https://kb.unavco.org/article/vaisala-how-to-integrate-the-vaisala-wxt510-520-with-the-trimble-netrs-netr9-411.html