b) Channel – This is the Wi-Fi channel on which the access point is configured. If not sure what channel to use, simply select Auto.

c) Authentication – This is the security method which the access point is using for connections. Choose the desired security based on the present access point settings.

Use WPA2-PSK for the most secure connection. AES security can be used to conserve battery power. WPA2-PSK Enterprise is not supported.

d) Passphrase – If authentication is WPA2-PSK, then enter a passphrase here.

- Passphrase restricted characters include *.
- The minimum characters that can be entered for Passphrase/WPA2 is 8, maximum is 63.

e) Default Key – This is the password if authentication is WEP-128.

- WEP KEY can only use the following characters: a b c de f 0123456789
- WEP KEY must be a length of 26 characters.

f) DHCP – Check this option if the Transmitter will receive a Dynamic IP address from a DHCP server.

For initial configuration, it is recommended to use DHCP for assigning IP Address to the Transmitter. The IP address can be made STATIC from the Virtual Coordinator after the Transmitter starts communicating with it.

- IP Address – Assign a STATIC IP address.
- Netmask – Assign a subnet mask associated with the STATIC IP address.
- Gateway Address – This could be the IP address of your access point or a router which the Transmitter is associated with.
- Virtual Coordinator IP – Assign the IP address of the access point on which the VC is installed.

Communication Protocol – This is the protocol used to communicate with the VC. Either TCP or UDP protocol can be used. UDP is default and uses less battery power.

- Virtual Coordinator Port – Readings from the sensor (Transmitter) are sent to the VC using this port number. Use the default UDP port and port 50002 unless this port is already used by another application. If TCP protocol is used change this port number to 50006.

Update Period – Enter the Transmitter’s reading transmission frequency in seconds.

- Save and Reboot – Click “Save Changes”. Verify the above settings and then click “Reboot”. The webpage should then refresh and you should be able to see the sensor readings.

Troubleshooting

Once you apply the steps described above, if you still cannot see the Transmitter on your VC check the following items:

1. Blue LED – The Blue LED on the Transmitter blinks every time it transmits data. If the Blue LED is solid, then means that it’s trying to connect and transmit data to the access point with no success.

2. Java Runtime Environment (JRE) – Make sure that the Java Runtime Environment (JRE) is running on the PC on which the VC is installed. If the Java Runtime is not installed on the computer the VC is installed on then there is a chance that the Transmitter was not configured properly. Should be 32-bit Java version 1.6 or higher.

3. Wireless Connect – If you plan to connect on a wireless LAN make sure that the wireless connection on your computer is linked to the correct access point. You may want to check to connect the same channel to which the Transmitter is connected. You can verify that by looking at the Wireless Connection Manager on your computer.

4. Wired LAN – If your computer is on a wired LAN then make sure that the correct access point is linked to your computer. You can check this by looking at the network connections on your computer.

Firewall – Make sure that the firewall is off or the exceptions are added properly.

Back to AD-HOC Mode – If you cannot find anything wrong with your computer wireless connection and the access point, then there is the chance that the Transmitter was not configured correctly. To reconfigure the Transmitter you must put the Transmitter back into the AD-HOC mode. To do this, open the case, slide the red Power button to the OFF position. Next, press and hold the white Default button, slide the red Power button back to the ON position, and release the white button when the blue LED comes up solid. You can now follow from Step 3.4 of the Transmitter’s initial Configuration section.

Access Point/Wireless Router – In general, the latest/newest access Points are better than older ones. Also, check to see if your access point has the latest firmware installed.

Specifications

- SPECIFICATION
  - SENSOR SPECIFICATIONS
    - RELATIVE HUMIDITY (wTHP): 10 to 90% RH non-condensing
    - TRANSMISSION FREQUENCY: 1 reading per 1 minute
    - ACCURACY: ±3% for 10 to 90% RH non-condensing
  - TEMPERATURE: ±0.5°C for 5 to 45°C (±0.9°F for 41 to 113°F), ±1°C for -40 to 5°C and 45 to 124°C
  - FEEDBACK FREQ: 1 reading per 1 minute
  - ACCURACY: ±3% for 5 to 45°C (±0.9°F for 41 to 113°F), ±4% for 0 to 5% and 95 to 100% RH
  - NON-LINEARITY: ±4% for 0 to 5% and 95 to 100% RH
  - RESPONSE TIME: 10 seconds
  - NOISE: ±0.1% rel.
  - POWER REQUIREMENT: ±6 mbar for 300 to 1100 mbar @ -40 to 85ºC
  - RESOLUTION: ±0.1% rel.

- ACCURACY: ±3% for 10 to 90% RH non-condensing

- TRANSMISSION FREQUENCY: 1 reading per 1 minute

- ACCURACY: ±3% for 5 to 45°C (±0.9°F for 41 to 113°F), ±4% for 0 to 5% and 95 to 100% RH

- NON-LINEARITY: ±4% for 0 to 5% and 95 to 100% RH

- RESPONSE TIME: 10 seconds

- NOISE: ±0.1% rel.

- POWER REQUIREMENT: ±6 mbar for 300 to 1100 mbar @ -40 to 85ºC

- RESOLUTION: ±0.1% rel.

- Wi-Fi System

- SPECIFICATION
  - OPERATING FREQUENCY: 2.4 GHz
  - DATA RATE: 1 Mbps
  - MODULATION: DSSS (CCK-11, DSSS)

- SPECIFICATION
  - TRANSMISSION FREQUENCY: 1 reading per 1 minute

- ACCURACY: ±3% for 5 to 45°C (±0.9°F for 41 to 113°F), ±4% for 0 to 5% and 95 to 100% RH

- NON-LINEARITY: ±4% for 0 to 5% and 95 to 100% RH

- RESPONSE TIME: 10 seconds

- NOISE: ±0.1% rel.

- POWER REQUIREMENT: ±6 mbar for 300 to 1100 mbar @ -40 to 85ºC

- RESOLUTION: ±0.1% rel.
The Virtual Coordinator “VC” Web Server

The Virtual Coordinator web-server is running. Once the installation is completed, open up a web browser and you will see a webpage for Initial Configuration. Enter the settings here. Refer to Figure 7.

Hardware/System Requirements:

• A computer running the VC server can be used for other tasks.

1. installing Virtual Coordinator Software

1.2. Firewall Exception:

1.3. IP Address:

1.4. IPv: 1.4. If this computer is used to run the VC only and not to configure the transmitter, then set a desired STATIC IP address. If this PC is used for configuring the Transmitter then set up a STATIC IP address of 169.254.1.1 for AD-HOC.

1.5. Gateway Address

1.6. Netmask

1.7. MAC Address

2. Battery Installation

Install batteries or connect the AC adapter (depending on model), batteries and/or AC adapter. Refer to main operators manual for Default Set-Up instructions.

3. Powering On the Transmitter

IMPORTANT

1. Make sure the red power switch is OFF. See diagram in Figure 2.

2. Install two C-cell batteries, or connect AC adapter and install backup AA battery.

3. Press and hold white reset button (labeled “SW2”).

4. While continuing to press the white reset button, the Transmitter will change from SET-UP mode to run mode.

5. Do not release the white reset button until the blue LED comes on (not blinking).

The transmitter is now in AD-HOC mode for initial configuration.

3.6 Finding the Transmitter

For the AD-HOC to work with the PC it usually takes 2-3 minutes before the VC web-server is powered ON. For iOS Devices it is much quicker, a few seconds. Connect to the wireless Network on the PC or Wireless Settings/Mac of the iOS device that is used to configure the Transmitter. The configuration software for wireless networks will show a network TKABO (or whatever is the last four characters in the MAC address of the Transmitter).

3.7. This is the only page in the Transmitter’s Web server designed for important parameters needed to initially configure the Transmitter. After this, you will have a chance to make changes (SW2) through the VC if needed.

a) Access Point SSID – This is the name that the access point/wireless router is broadcasting on your Wi-Fi wireless network. In order for the Transmitter to associate itself with the access point, enter the access point’s SSID:

• SSID restricted characters include: * & [ ] + ;

• SSID cannot begin with 1 or #.

• The length of SSID is 1 to 32 characters.