



KD Engineering's **BlackBoxx**

Operator Guide



K.D. Engineering

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Introduction

This guide provides information to help you use the BlackBoxx gateway device.

The following sections are in this guide.

- *Parts Checklist.* This section contains information on what should come with your BlackBoxx.
- *Powering the BlackBoxx.* This section contains instructions turning on and off the BlackBoxx.
- *Installing the BlackBoxx.* This section contains information regarding a typical setup of the BlackBoxx and shAirBoxx IAQ monitor.
- *Using the Touch Screen Menu.* This section contains operation information using the BlackBoxx touch screen.
- *Troubleshooting.* This section contains information to help you resolve problems you may encounter when using the BlackBoxx.
- *Limited Warranty.* This section outlines the terms by which K.D. Engineering warrants the BlackBoxx.

Thank you for purchasing the I.A.Q. monitor. For information about other products available or technical support, call K.D. Engineering toll-free at (800) 308-7717 or visit our website at www.teamkd.com.

Parts Checklist

Include Parts with the BlackBoxx

Before powering the unit, please make sure that the following items were included with it:

1. BlackBoxx monitor
2. Power supply adaptor
3. RJ45 cable
4. Antenna
5. Hardware Manual
6. Software Manual

Powering the BlackBoxx

Please note that the BlackBoxx has no power switch or button. Unit powers automatically upon plugging in the power adaptor to a wall plug. To turn the unit off, tap the **Unit Off** box on the touch screen.

Note: it is important to use the powering down procedure noted above as simply unplugging the unit can result in the corruption of data.

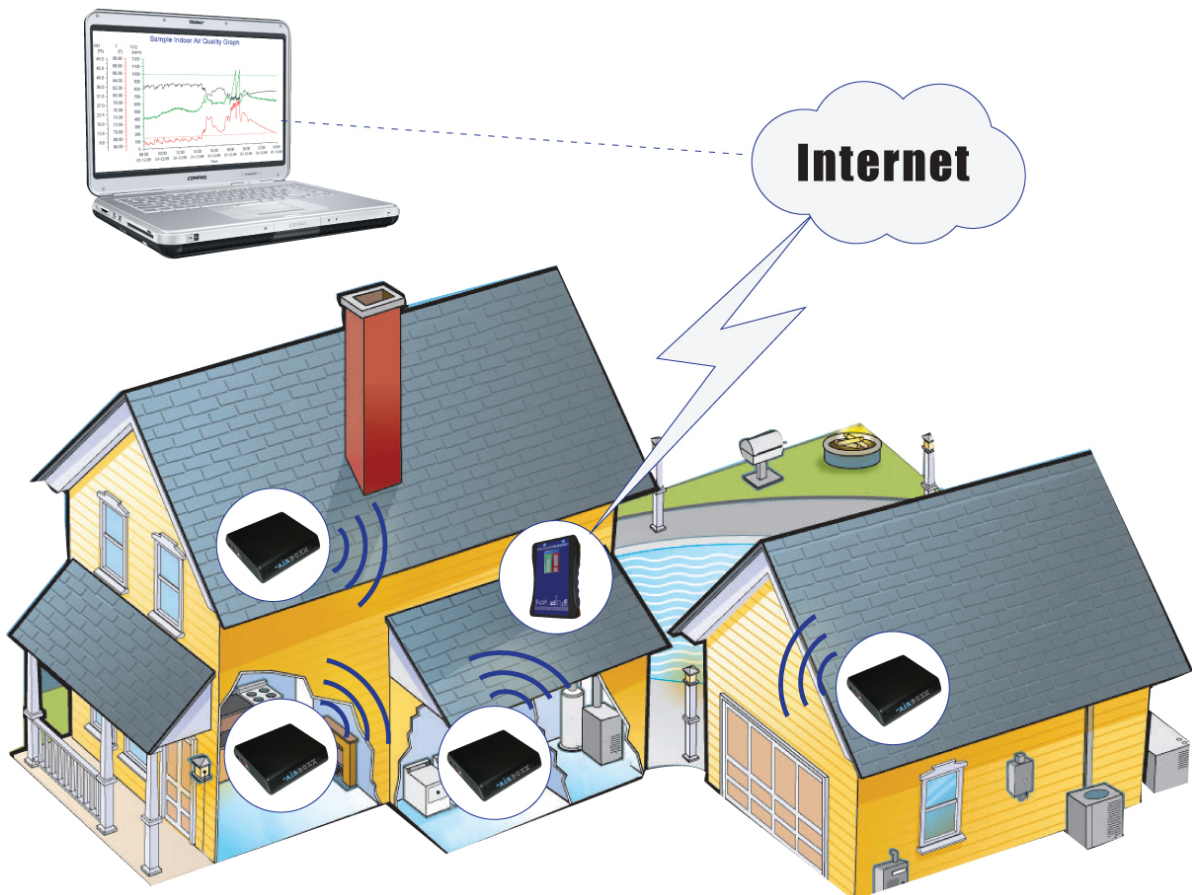
Installing the BlackBoxx

This section contains information to help you set up your BlackBoxx in conjunction with your shAirBoxx units. You will need at least one shAirBoxx in order to gather data on the BlackBoxx.

The following steps should be followed once your shAirBoxx is powered and within range of the BlackBoxx:

1. Plug Ethernet into BlackBoxx
2. Plug power supply into wall and BlackBoxx
3. Wait for Radio Network and Internet to turn green
4. You should now be receiving data from the shAirBoxx and transmitting that data to the shAirBoxx website – www.shairboxxonline.com

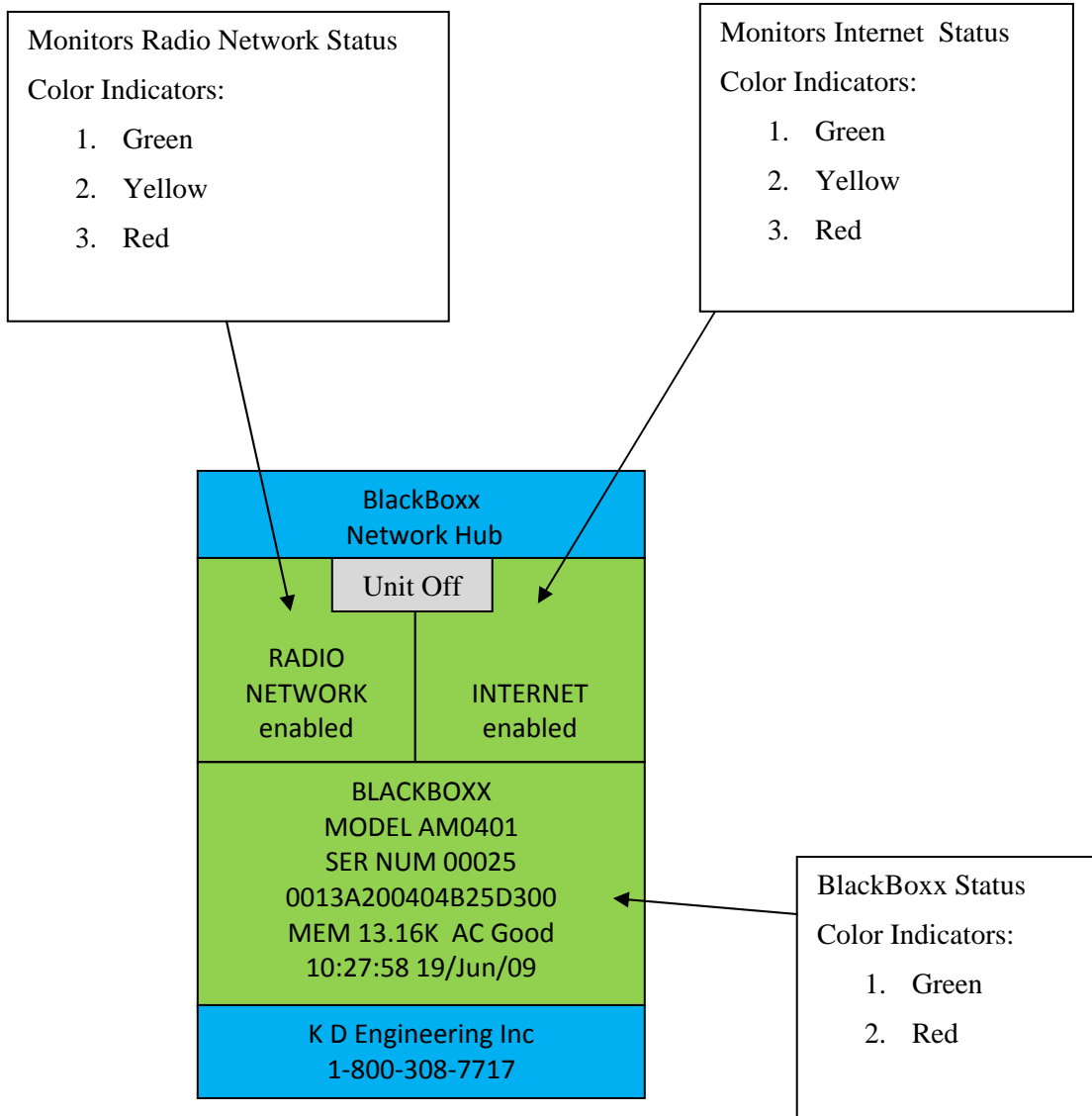
The diagram below depicts a typical shAirBoxx / BlackBoxx setup:



Using the Touch Screen Menu

BlackBoxx Main Screen

See diagram below:



Radio Network Status

This function monitors the status of the BlackBoxx connection to shAirBoxx(es).

Color indications:

- **Red:** Color starts red when unit is powered on
- **Yellow:** Color becomes yellow while scanning shAirBoxxes. Yellow also indicates that the Blackboxx has found at least one shAirBoxx
- **Green:** Indicates that every shAirBoxx found has been bound to this Blackboxx

Note: If two BlackBoxxes are being used in the same space with multiple shAirBoxxes, the **RADIO NETWORK** screen of both units will be yellow.

Internet Status

This function monitors the status of the Blackboxx connection to the Internet server.

Color indications:

- **Red:** Color starts red when unit is powered on
- **Yellow:** Color turns yellow when the BlackBoxx receives a valid IP address
- **Green:** Color turns green once a connection with the server is established

BlackBoxx Status

This function monitors the operating status of the BlacBboxx unit.

Color indications:

- **Green:** Color starts green when unit is powered on
- **Red:** Color turns red when:
 1. unit's internal memory is full
 2. high voltage is either too high or too low for unit's normal operation
 3. unit's clock component is defective

Binding / Unbinding a shAirBoxx from a BlackBoxx

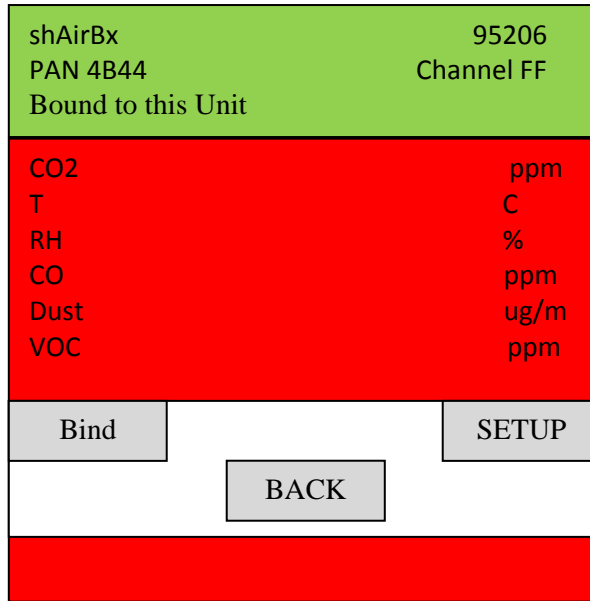
Note: If you only have one (1) BlackBoxx, you should not ever have to bind or unbind your shAirBoxx.

Tap the **RADIO NETWORK** enabled box to go to the full RADIO NETWORK window. See figure below.

BlackBoxx RADIO NETWORK		
REFRESH		
AMM04	00018	
PAN 4B44	Channel FF	
shAirBx	96125	☺
shAirBx	95206	☺
shAirBx	8B209	☺
shAirBx	96213	☺
BACK		

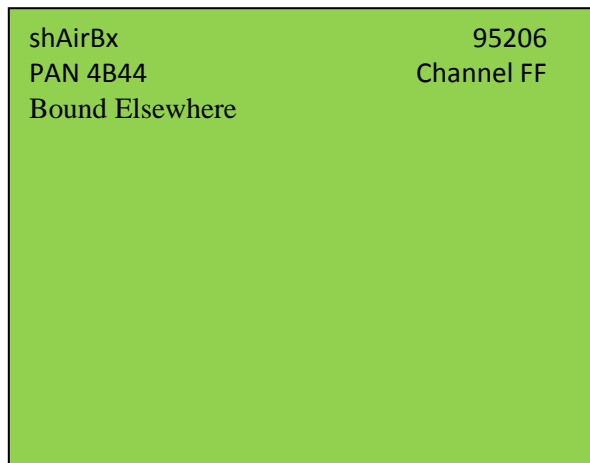
Note: shAirBoxxes discovered by the BlackBoxx are displayed by model number and serial number. To toggle to their corresponding board serial number, tap anywhere on box A. A happy face means the shAirBoxx is bound to the BlackBoxx. An Unhappy face means the shAirBoxx is unbound.

To bind a shAirBoxx (Only shAirBoxxes with unhappy faces can be bound), tap on the unbound shAirBoxx that you want to bind and it will bring you to another screen (shown below). Tap the **Bind** button to bind and then the **Back** button to return to the previous menu.



Note: The readings on the screen will update every time a packet is received from the shAirBoxx. The default interval is 5 minutes but the recording interval can be changed on the shAirBoxx.

To unbind a shAirBoxx (Only a shAirBoxxes with a happy face can be unbound), tap on the bound shAirBoxx that you want to unbind and it will bring you to another screen (shown below) Tap the **UnBind** button to unbind and then the **Back** button to return to the previous menu.

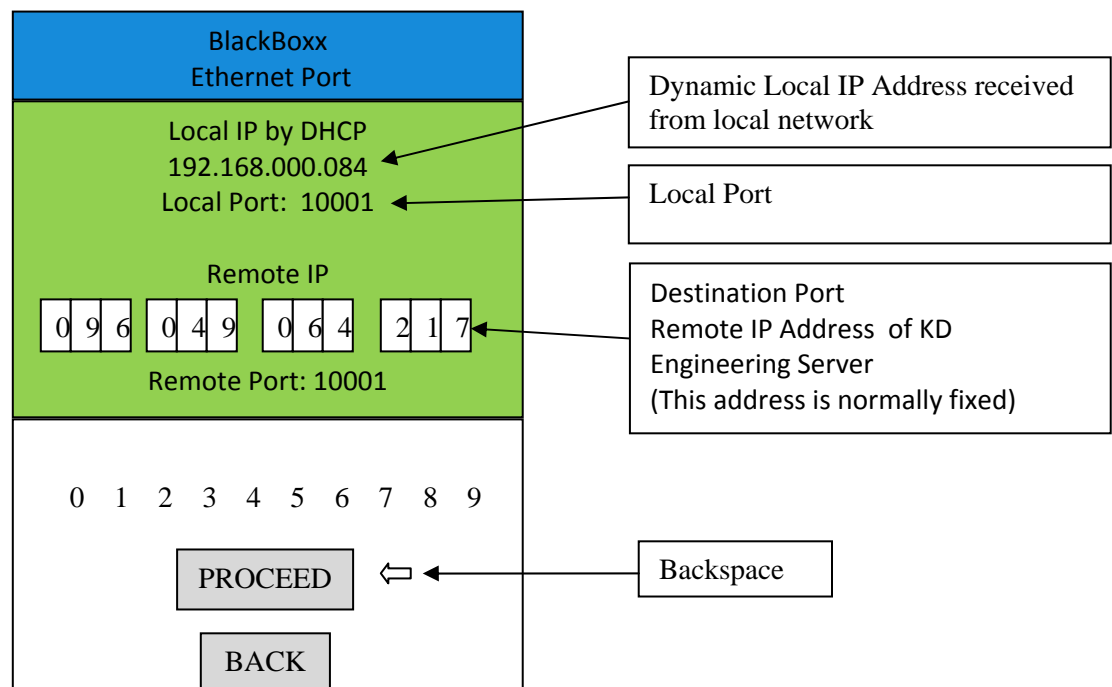


Note: It may take 10-20 minutes for the BlackBoxx to update the changed status due to its internal communication timing with the shAirBoxx. To see immediate results, you may tap on the **Refresh** button.

Changing Internet Settings

It is not recommended to change the remote IP address as this should remain constant. In the event that this number needs to be changed, please do the following:

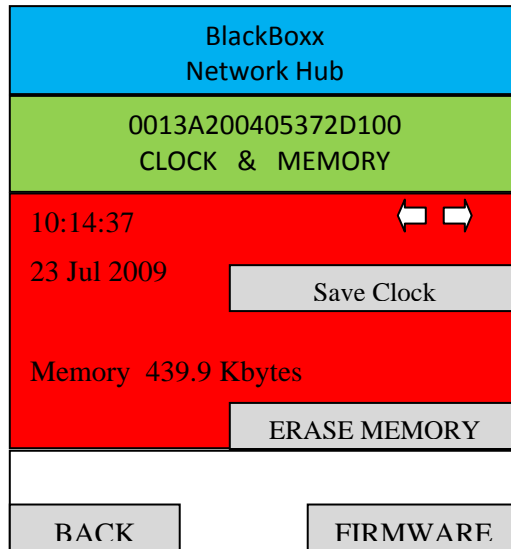
1. Tap the Internet status box on the main screen
2. Tap the **SETUP** button when the BlackBoxx Ethernet Connection screen appears (BlackBoxx Ethernet Port screen shown below).
3. If leftmost digit does not have black background, tap on anywhere on the Remote IP address. This indicates that unit is in edit mode and the leftmost cell is active.
4. Enter the number you want in the active digit and the digit immediately to its right becomes active. Repeat process until you reach the last digit. To go back to the previously modified digit, tap on the left arrow.



5. Tap the **PROCEED** button twice to apply changes.

Changing the Unit's Internal Time and Date

1. Tap on the BlackBoxx status on main screen. The Network Hub screen appears:



2. Tap on hours, minutes, seconds, day, month or year to modify and (by using the right or left arrows). Tap **Save Clock**. The unit's internal time and date will be changed.
3. Tap **BACK** to return to main screen.

Erasing Unit's Memory

1. Tap on the BlackBoxx status on main screen. The BlackBoxx Network Hub screen appears.
2. Tap **Erase Memory** to reset the unit's memory.

Troubleshooting

This section contains information regarding problems you may encounter using the BlackBoxx.

Problem	Suggested Solution
Internet screen stays red	<ul style="list-style-type: none"> • Ensure Ethernet is connected to your network with active DHCP server (unit needs valid IP address) • Reboot BlackBoxx
shAirBoxxes not listed on BlackBoxx Radio Network screen	<ul style="list-style-type: none"> • Click Refresh button • shAirBoxx is out of range (move shAirBoxx closer) • Orientate the antennas of the BlackBoxx and shAirBoxx in parallel
Not all shAirBoxxes listed are bound (happy face)	<ul style="list-style-type: none"> • Choose unbound shAirBoxx and click Bind
Radio Network screen stays yellow	<ul style="list-style-type: none"> • This indicates that at least one shAirBoxxe(s) within range is (are) not bound.

For additional troubleshooting information, call K.D. Engineering toll-free at (800) 308-7717 or email info@teamkd.com.

Limited Warranty

K.D. Engineering warrants that this equipment (except for sensors) will be free of defects in materials and workmanship for a period of **two years** from the date of original purchase when used in compliance with directions outlined in this document. Sensors are warranted for one year only.

This warranty does not cover repair or replacement required as a result of misuse, mishandling, or improper storage.

K.D. Engineering will, at its option, repair or replace any defective equipment or parts at its facility or other location approved by it at no charge to the user. User will be responsible for all costs of shipping equipment to K.D. Engineering or another location for warranty service.

K.D. Engineering makes no other warranty, expressed or implied, and makes no warranty of merchantability or fitness for a particular purpose.

Except for the remedy described above, unless otherwise required by applicable law, K.D. Engineering will have no other obligation with regard to any breach of warranty or other claim with respect to the equipment, or liability for any direct, indirect, consequential, or incidental loss or damage caused by or occurring in connection with any of the equipment.

Warranty is void if equipment is subjected to unauthorized service.

To obtain warranty service, return the I.A.Q. monitor to your authorized distributor or send it directly to:

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Vancouver, British Columbia
V6N 2T5
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