Honeywell

IQ Express™ Ethernet Instructions

⚠WARNING

THE IQ EXPRESS™ IS DESIGNED TO INTERFACE WITH HONEYWELL ANALYTICS GAS DETECTORS.

HONEYWELL ANALYTICS GAS DETECTORS HAVE BEEN DESIGNED FOR THE DETECTION OF DEFICIENCIES OF OXYGEN, ACCUMULATIONS OF FLAMMABLE GASES AND VAPORS AND ACCUMULATIONS OF TOXIC VAPORS.

IN ORDER TO ENSURE THAT THE USER IS PROPERLY WARNED OF POTENTIALLY DANGEROUS ATMOSPHERIC CONDITIONS, IT IS ESSENTIAL THAT THE INSTRUCTIONS IN THIS MANUAL AND THE OPERATIONS AND/OR REFERENCE MANUAL(S) FOR THE GAS DETECTOR(S) BE READ, FULLY UNDERSTOOD, AND FOLLOWED.

THIS MANUAL IS NOT INTENDED TO REPLACE THE OPERATIONS AND/OR REFERENCE MANUALS FOR THE GAS DETECTOR. THIS MANUAL IS ONLY DESIGNED TO AID IN THE INSTALLATION AND OPERATION OF THE IQ EXPRESS SYSTEM AND SHOULD BE USED IN CONJUNCTION WITH THE INSTRUMENT REFERENCE OR OPERATIONS MANUAL AT ALL TIMES.

Table of Contents

1. Overview

This document is designed to assist the user in setting up and using the IQ Express Dock with an Ethernet connection. This manual is designed to be used in conjunction with the standard IQ Express and the IQ Database Manager Reference Manuals.

1.1   MAC Address

Each Ethernet-ready IQ Express Dock is given a unique Ethernet physical address before it leaves the factory. The address is shown on the bottom of the dock and will be uploaded automatically to the PC when the dock is connected to the network,

1.2   Software Requirements

To be Ethernet-compatible, the IQ Express Dock must be equipped with flash version 4.0 or higher and must be equipped with an Ethernet port. The PC must be equipped with IQ Express Software version 4.0 of higher.

Note: The IQ Express Dock's flash will be automatically updated by the PC as needed to meet the needs of new PC software versions.

1.3   Network Connection Settings

Once the Ethernet connection has been established, the user will have the option of configuring the dock to be "Active" and in either "Live" or "Listening" Mode. The network connection setting controls the nature and frequency of the connection between the dock and the PC and also affects the number of docks that can be controlled by a single PC over the network. See section 4 for further details.

1.4   Network Architecture

See section 7 for the network architecture diagram.

2. Preparation

If this is the initial installation of the IQ Express PC software, or if the software is being upgraded, follow steps 1 and 2 below prior to configuring the docks.

1. Follow the instructions given in the IQ Express Reference Manual for PC Software installation. If upgrading existing software to version 4.00 (or higher), the procedure is the same.

2. Install the Database Manager program on your PC. See the IQ Database Manager Reference Manual for details.

3. Configuring the docks for Ethernet usage

For systems running a server that automatically assigns IP addresses, follow the Dynamic IP Configuration instructions given in section 3.1. For all other Ethernet systems, follow the Static IP Configuration instructions in section 3.2.

3.1   Dynamic IP Configuration (DHCP)

1. Connect the dock or dock(s) to the network and an appropriate electrical source.

2. Launch the IQ Express PC Software by clicking on the IQ Express Icon on your desktop. If the IQ Express Dock's Flash needs to be updated, the PC will automatically prompt to proceed with the update.
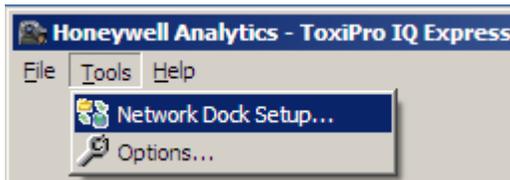
    On initiation, the PC will not recognize any of the docks and the following window will be shown:
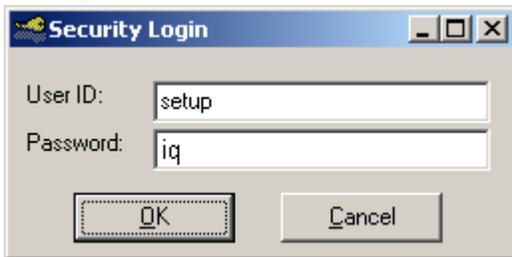

3. Click OK. The IQ Express main screen will be shown, but most of the information will be unavailable.
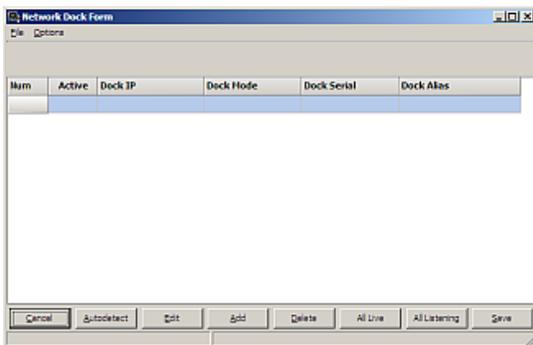

4. Click on Tools / Network Dock Setup.

The log in window will be shown.

5. Enter an ID and password. If this is the initial loading of the software and user IDs haven't been established, enter "setup" as the User ID and "iq" as the password to gain administrator access to the program. The Network setup screen will then be shown.

6. Click on "Autodetect" to search for all available docks.
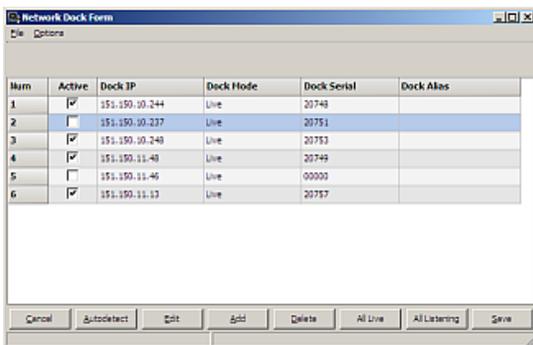
7. Click Active check box to select the docks you wish to use then Press Save

8. Double click or press the edit button to open the "Edit settings window" switch between Live and Listening Docks
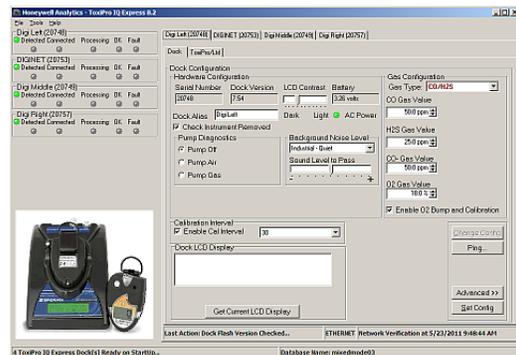
For more information on the difference between the Live and Listening settings, see section 4.

9. The blank IQ Express screen will be shown again.

10. Close out the software by choosing Exit from the File Menu.

11. Restart the software. As the docks are loaded, the status is shown in the lower right corner of the screen.

Enabling Dock 5/10 (Attempt 3/5) ...

At this point the docks that are connected should be shown on the screen.

Note: If this process fails on a functioning system, connect the dock(s) to the PC via USB port, click on the Ethernet button to check the IP address.
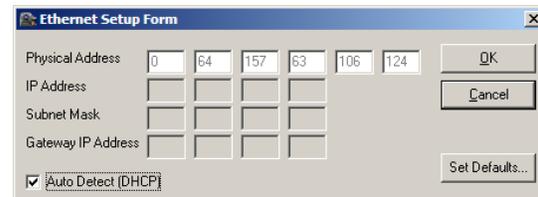
If Auto Detect DHCP is a DHCP server is required to provide the IP address for the dock. In Static IP configuration the IP is fixed and will not change.

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3.2 Static IP Configuration

For systems without the capability to automatically assign Ethernet addresses, follow these instructions:

Note: Only docks that are connected via USB and recognized by the PC software at software launch may be configured. To program more docks, the software must be closed and then restarted with the new docks plugged in via USB.

3.2.1 Configuring the addresses

1. Connect the dock or dock(s) to the PC via USB cable. Use the power supply / wall cube included to connect the dock to an appropriate electrical outlet. If multiple docks are being configured at the same time each dock must be powered using the power supply that was included with the dock. After satisfying the power requirements the docks can be connected directly to the PC by using a USB cable or by using a USB hub.

Note: USB cable length from the PC to the dock or hub may not exceed 10 feet.

2. Launch the IQ Express PC Software by clicking on the IQ Express Icon on your desktop. If the IQ Express Dock's Flash needs to be updated, the PC will automatically prompt to proceed with the update.

   The following screen will be shown:
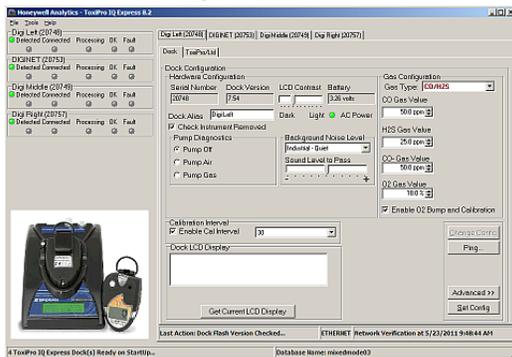
At this point the docks that are connected via USB should be shown on the screen. The status of the docks is shown in the left column. On the right side, each dock is also listed. At the bottom right of the screen, the status bar for each dock should indicate that the connection is by USB.
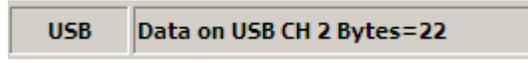
3. Click the "Ethernet" button at lower right.

The Ethernet Setup window will be shown for the dock whose information is currently shown.
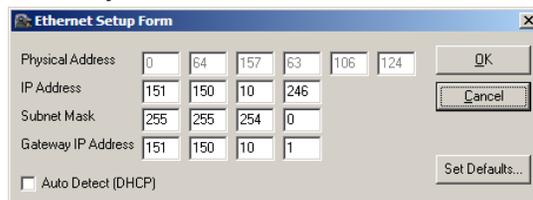
Note: The Physical Address is unique to the IQ Express Dock and may not be changed by the user.

4. Enter the IP Address, Subnet Mask and Gateway IP Address for your network. You may need to speak to your network administrator or IT department to get this information. If your network doesn't have a Gateway IP Address, enter "0" in each of the four fields. Click OK once the information has been entered.

5. Click the "Set Config" button at lower right to send the Ethernet settings to the dock. The software may prompt you to log in again.

Note: These changes will only take effect after the dock has been shut down and reconnected.

6. If more than one dock is plugged in and being configured at this time (either via additional USB hub or multiple USB ports), click on the tab for the next dock and complete step 3-5 above.

7. Once the Ethernet information has been added to the dock(s), unplug the dock from its USB cable and

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disconnect power if necessary. **The dock must be completely turned off before proceeding to section 4 below.**

8. Close down the PC software.

9. If more IQ Express Docks need to be programmed, connect the next dock or set of docks to the PC via USB and complete steps 1-8 above.

Note: If the software fails to detect any docks when it is launched, either by USB or Ethernet, the following warning will be shown.

3.2.2 Initiating the Network Connection

1. Make sure that the USB cable(s) are disconnected. Then plug the network cable(s) into the dock(s).   There are two LEDs on a standard network cable. These should be lit.

2. Plug the dock in to an appropriate electrical source.

3. Click Tools / Network Dock Setup and log in.
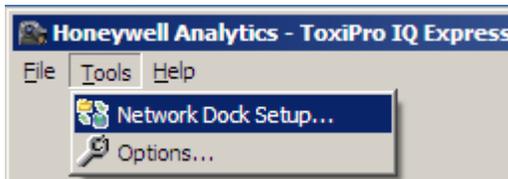
The log in window will be shown.

4. Enter an administrative level user ID and password. Once the User ID and password are accepted, a list of devices will be shown comprising all of the docks whose network addresses were entered above.

**Note : Check marks in the "Active" column indicate these docks are able to connect the software**

5. Click the "All Live" button.

6. The software will make you confirm that you want to change the Network connection status to "Live".

7. Click Yes. The Network Connection Status will change to "Live"

8. Close out the software and restart it. The docks should appear in the software once the software reboots.

Once the docks are recognized on the network, the status bar near the bottom of the screen will show "Ethernet".
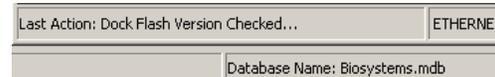
4. Network Connection Settings

Once the network connection is initiated and the docks have been successfully set to "Live", the user may choose to leave the settings for each dock in "Live" mode, disable them by un-checking the active column ,or place them in listening mode (See Section 4.2). The network connection setting controls the nature and frequency of the connection between the dock and the PC and also affects the number of docks that can be controlled by a single PC over the network. The network connection options are defined as follows:

Live: When the dock's network connection setting is set to "Live", the dock is in constant communication with the PC. For smaller systems, or networks with little traffic, the "Live" setting offers constant dock monitoring

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and instant data transfer from the dock to the PC.

A single PC can control a maximum of 50 docks when all of the docks are in "Live" mode.

Listening: When the dock's network connection setting is set to "Listening", the PC will automatically query the dock(s) at a specified interval. In Listening Mode, the dock effectively functions as a standalone calibration station that automatically downloads its information to the PC at the next query. Listening Mode results in a reduction of traffic across the network.

**See section 5.2 for instructions concerning the Query Interval.**

A single PC can control a maximum of 200 docks when all of the docks are in "Listening" mode.

Disabled: When the dock's network connection setting is set to Disabled, the PC will never automatically access the dock. When set to "Disabled", the Dock functions as a standalone calibration station and will store records for as long as it can before its memory is full. The user must initiate communication with the dock by either USB or Ethernet connection to obtain records, or update the dock's flash.
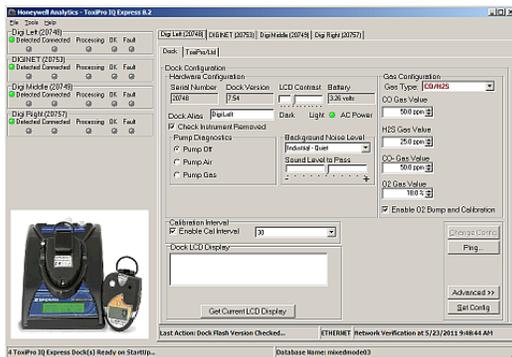
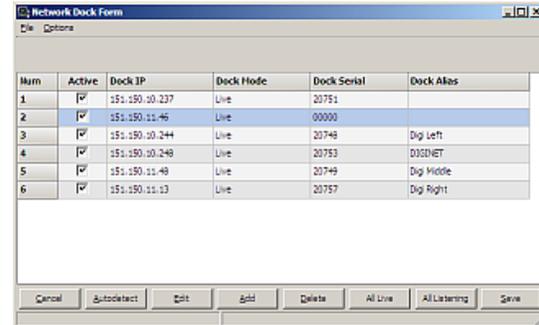## 4.1   Changing the Network Connection Setting

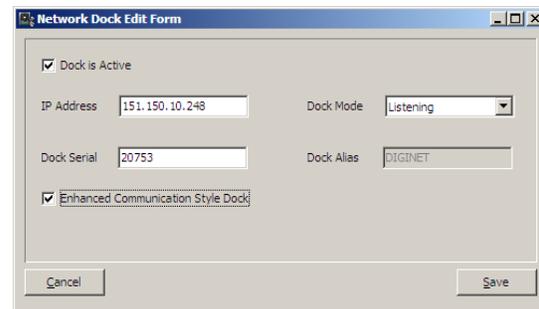1. Click Tools / Network Dock Setup and log in.
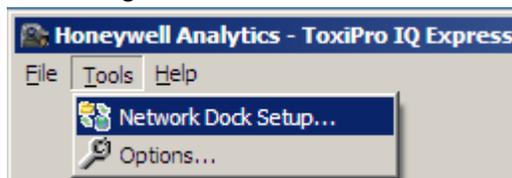
The log in window will be shown.

2. Enter an administrative level user ID and password. Once the User ID and password are accepted, a list of devices will be shown comprising all of the docks on the Network.

3. To change the Network Connection settings all at once, click on "All Live", "All Listening"

4. To change the individual dock settings, double click on the row or select Edit.

5. Once finished editing the record use the Save button to save any changes.

6. When finished configuring all attached docks click the Save button on the "Network Dock Form"

7. The following window will be shown to indicate that the software must be restarted for the new dock settings to take effect.
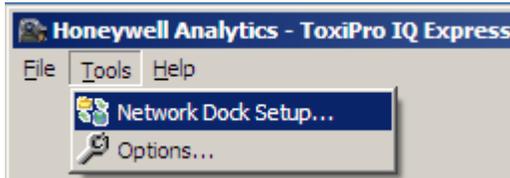
4.2 Listening Mode Query Interval

Listening Mode Query Interval allows the user to select the frequency of queries between the PC and the IQ Express Docks.
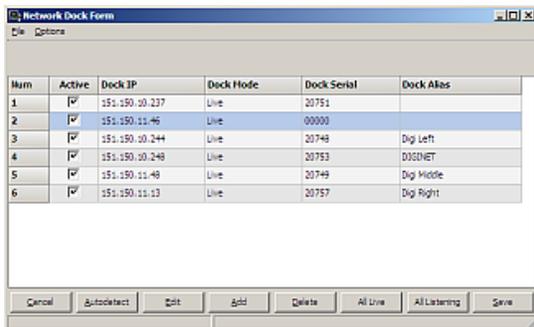
To Select Listening Mode:
1. Click Tools / Network Dock Setup and log in.

The log in window will be shown.

2. Enter an administrative level user ID and password. Once the User ID and password are accepted, a list of devices will be shown comprising all of the docks on the Network.

3: Use the All Listening button or edit each dock you wish to operate in listening mode

4: Press the save button to save those changes

5. Acknowledge that you will need to restart the software for these changes to take effect

5. Status Indicators

As is the case with the standard USB configuration, the screen with Ethernet docks is divided into a narrow column at the left, and a wider section at the right.

5.1 Left Column

The left side gives the status of the docks that are currently installed and recognized by the PC.

Each dock that is currently in contact with the PC via USB or a "Live" Ethernet connection is shown at left. The LED to the far left shows the general status of the dock. Green indicates that the dock and connection are functioning normally. Blinking yellow indicates that the network connection may be compromised. Red indicates that the dock is no longer present on the network.
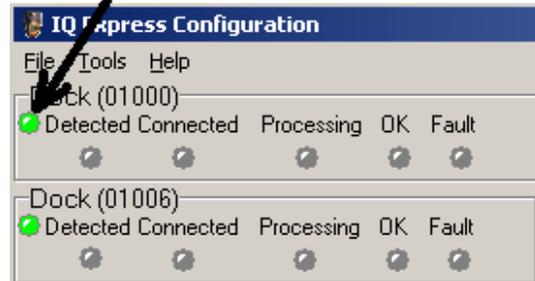
Each dock is given its own row of LEDs. These LEDs show dock status while an instrument is interfacing with the dock.

If there are docks connected via Ethernet that are in Listening Mode, the final row will show "Listening Mode" and will serve as a single indicator for all docks currently set to Listening Mode.
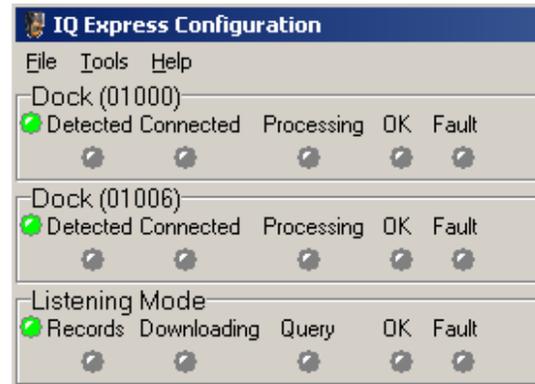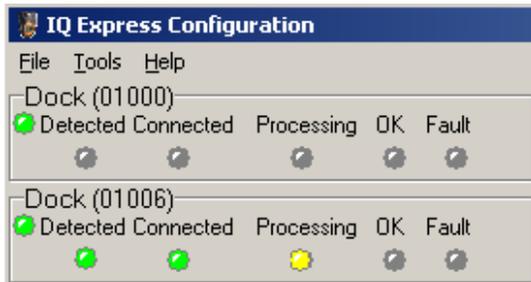

Note that in Listening Mode, a green dock status LED means that at last query, all of the docks in Listening Mode were functioning normally.
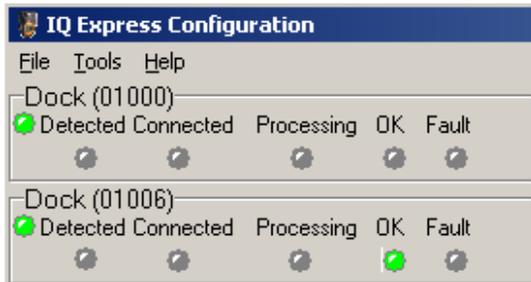
5.1.1 Instrument status LEDs

When a detector is placed in the dock, the indicator will change to reflect the new status. Status changes are also shown on the dock's LCD.
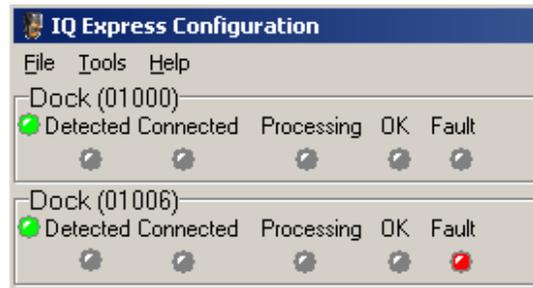

↓
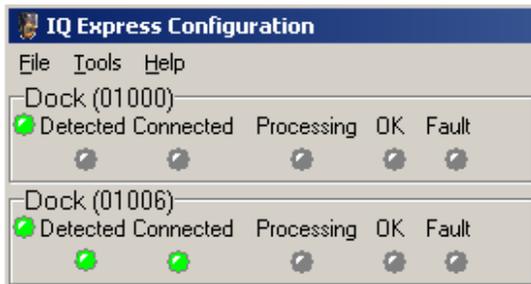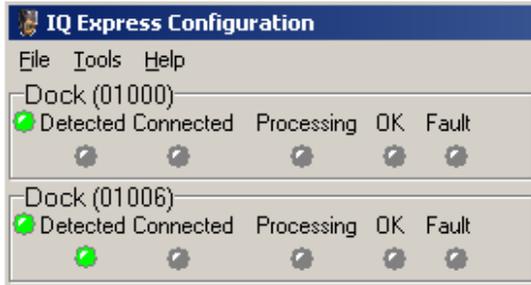
Processing is shown in yellow.

If the dock is able to successfully complete processing, OK will be shown in green.


If a fault is detected and the IQ Express Dock is unable to complete the tests, the red fault light will be lit on the screen. Details of the fault will be listed in the input box on the right side of the screen under the instrument tab.


⚠ **WARNING** Do not reinsert the ToxiPro or ToxiLtd back into an IQ Express Dock for at least 5 minutes after it has been removed. Immediate reinsertion of the ToxiPro or ToxiLtd into an IQ Express Dock may lead to inaccurate and potentially dangerous readings.

For docks in Listening Mode, if a single fault is detected on any of the docks, the dock LED will turn grey and the Fault LED will turn red.
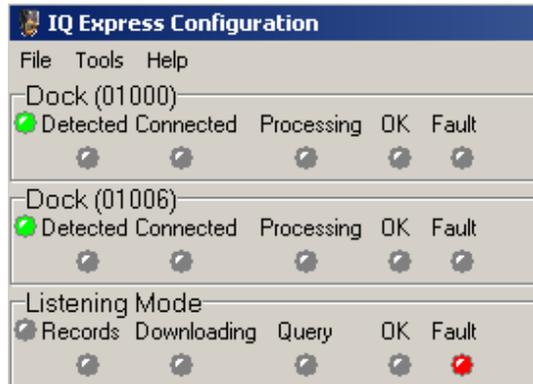
5.2   Right Column

At the top of the right side of the screen there is a tab for each dock that is currently in contact with the PC by either USB or by a "Live" Ethernet connection. Contained within each tab are two sub-tabs: one for dock controls and one that shows the calibration status and details for the instrument that is currently in the dock.

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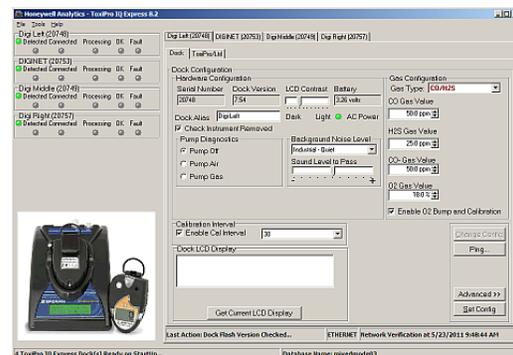
Docks that are in "Listening Mode" are given the furthest tab to the right at the top of the right column and are shown as "Express Dock (Listening Mode)". Click on the dock's tab to view individual records for each dock that is currently registered on the system in "Listening Mode".

Individual LEDs are shown during individual dock downloading and querying as well as for faults. For more information on individual dock status click the "Show Details" button on the far right

6. Troubleshooting

If a connection can not be established, a message box will be shown with the reason. To immediately rule out the IQ Express Dock itself and the IQ Express PC Software, do the following:

1. Close down the software and reboot it. Contact may be reinitiated, so

check the status LED of the dock before proceeding.
2. Make sure that the USB cables are disconnected from the IQ Express Dock.
3. Click Tools / Network/Alias Dock Setup and log in.
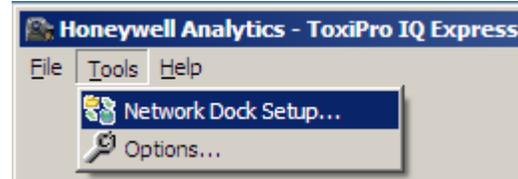
4. Verify that the network connections are set to live and that the IP address is correct for the dock in question.

6.1 Ping

To immediately test the status of the Ethernet connection, press the Ping button at the lower right of the dock screen.

7. Network Architecture

Network Architecture

PC with Dock Control

IQ Express Docks

Network

IQ Database Manager Software

IQ Express PC Software

PCs with Database Access Only

Network Server

IQ SQL Database

IQ Database Manager Software

IQ Database Manager Software