Thank you for your purchase of:

AudioFetch Express

By Broadcastvision Entertainment

AudioFetch Express is a compact cost effective solution delivering high-quality low-latency audio from TVs, STBs, or other audio sources via Wi-Fi to personal mobile devices such as smartphones and tablets.

The integrated Wi-Fi is by default configured as an Access Point. Or the AudioFetch Express can be connected wired or wirelessly into a pre-existing Wi-Fi network enabling greatly simplified installations in fitness clubs, sports bars, movie theaters, waiting rooms, meetings, conventions or wherever users need convenient access to in-house audio sources.

Your AudioFetch application is as follows:

Proposal Number : _____

AF Express Networking Mode : Access Point / Wireless Client / Wired Only

Specific Cables Requested : _____

Note: If no specific cables or lengths are requested, a 6' RCA to 3.5mm jack cable will be included.

Additional cable lengths and types are available at www.monoprice.com

Please call technical support at 888.330.4283 x3 if your application differs from the above.

CONTENTS

1. The AudioFetch App

Download the latest AudioFetch app for free from the Google Play® or Apple iTunes® store. Familiarize yourself with the drop down menu including the help menu section should it be needed during installation.

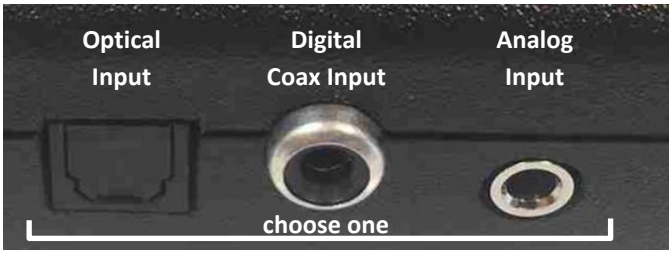
2. Connecting AudioFetch to Audio Sources

Connect an audio source to one of the 3 input options. CHOOSE ONLY ONE INPUT CONNECTION. Two popular analog connections are RCA (one red and one white) and a 3.5mm stereo jack (headphone jack). Either one can be connected into the Analog input of AudioFetch which is a 3.5mm stereo jack. Digital connection options are optical and digital coax.

Note that RCA and digital coax connections are not the same. A digital coax output (on TV, etc.) cannot connect into the AudioFetch Express analog input. An RCA analog output (from TV, etc.) cannot connect into the AudioFetch Express digital coax input. The configuration management pages can be logged into as described below to determine if a good audio signal is connected into the channel. When connecting via digital inputs, always choose the audio source type (in the TV or STB menu) as PCM since Dolby Digital encoded signals are not supported.

Picture A: Cable Types

Picture B: Audio Input



3. AudioFetch "Swag" - TV Signage, Table Tents, Cardio Clings and Window Stickers

Post the provided signage on the TVs. Cardio clings, table tents and door/window stickers are provided to enable patrons to easily obtain and use the AudioFetch app.

4. The Free AudioFetch Ad Portal

The AudioFetch app displays custom ads and notices which can be managed from the cloud. Log into the ad portal at www.audiofetch.com/portal using the username and password provided below to post your ad/info graphic that can direct users to website, an e-mail address, and/or phone number that you specify. Add multiple graphics that rotate through at the time duration you specify. Call 888.330.4283 x3 to confirm your log-in credentials if needed.

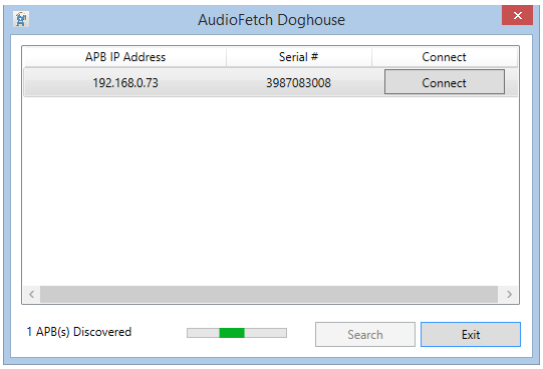
Username: _____

Password: _____

5. Configuration Management – "The Doghouse"

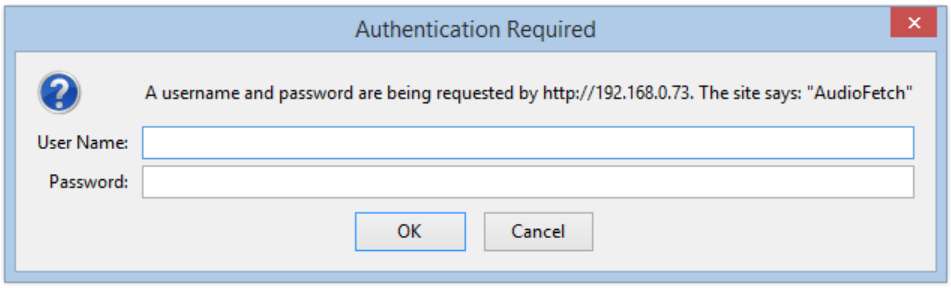
Most applications do not require access the Doghouse Configuration Management tool since the default settings are adequate. Configuration settings can be viewed using a web browser on a device (PC, Tablet, mobile phone etc.) that is connected to the same pre-existing network as AudioFetch Express (when operating in Client Mode) or connected to the AudioFetchExpress Wi-Fi network (when operating in Access Point mode).

First, ensure your device is connected to the same network as AudioFetch Express. **Option to use Doghouse on a Windows device:** Run the Doghouse Utility found at www.audiofetch.com/doghouse to locate AudioFetch on the network. Once the AudioFetch box is displayed, click the "Connect" button to open the starting configuration page on a browser.

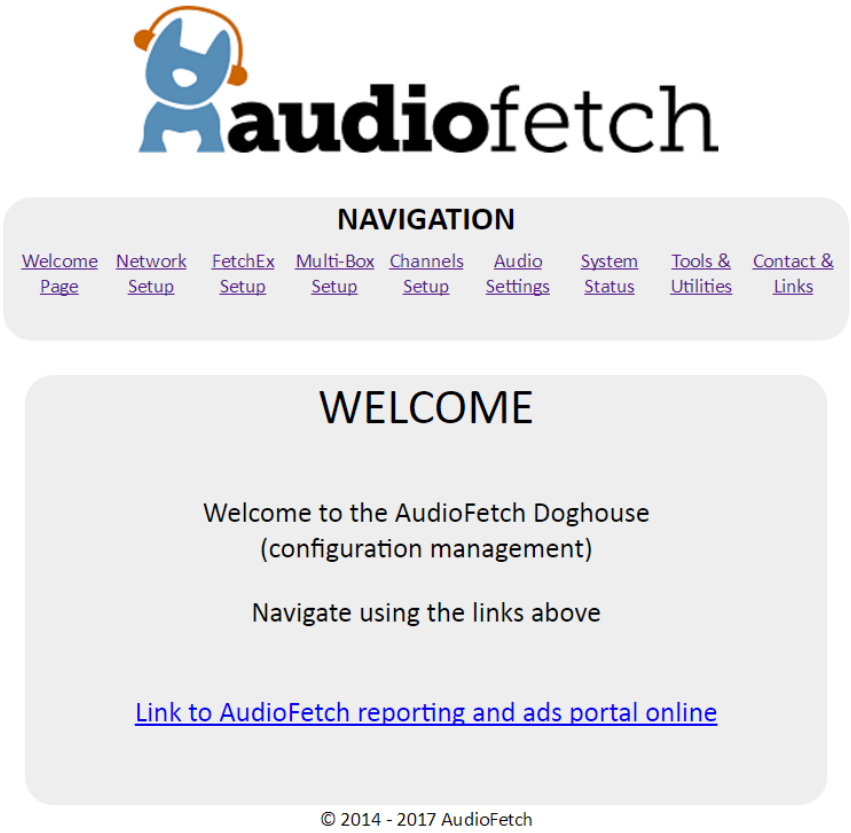


Option to use Doghouse on Android or Apple devices: Search and download "AudioFetch Doghouse" in the Google Play® (Android OS devices) or Apple iTunes® (Apple devices with iOS operating system) store.

A username/password is required, default is: ADMIN/admin.



You will see a welcome page similar to below:



Use the links in the **NAVIGATION** section to access each of the configuration pages, which are described below.

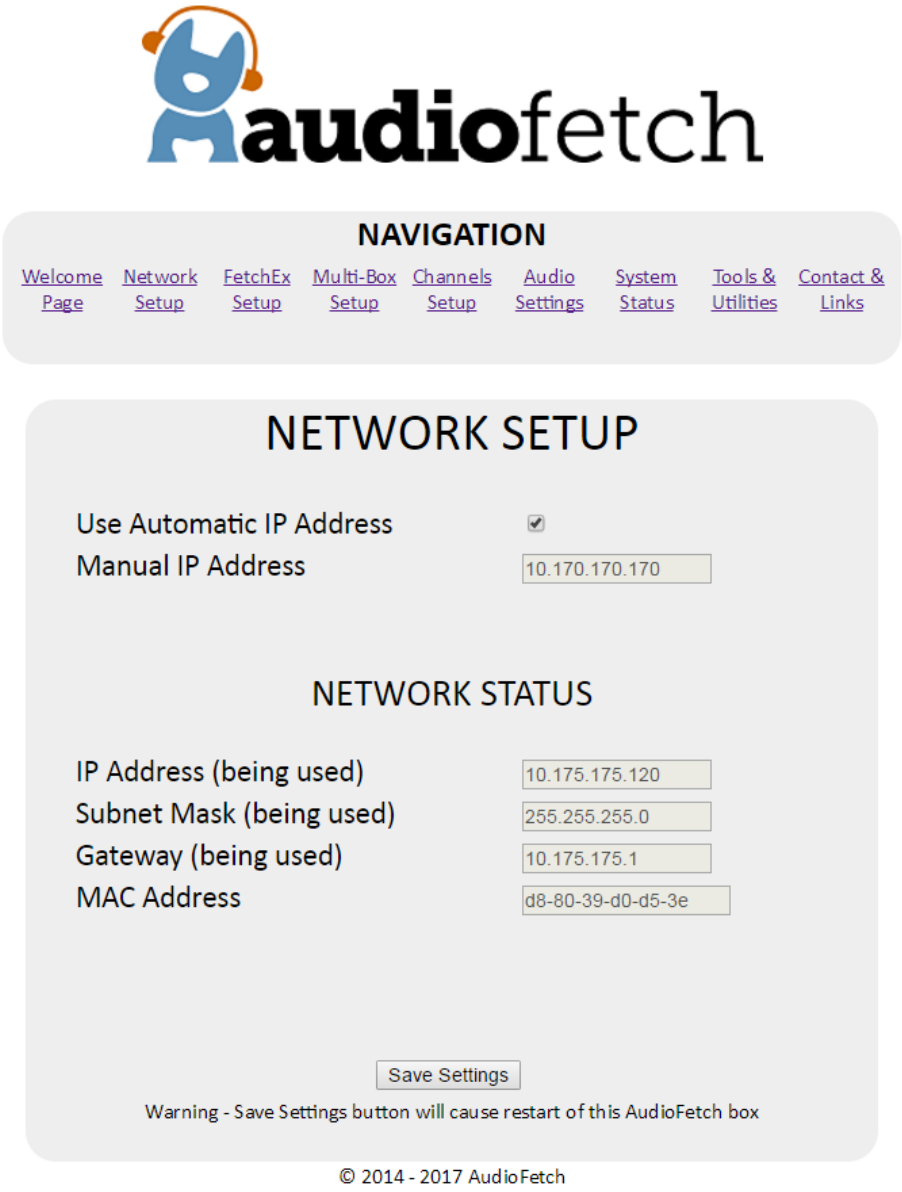
Network Setup

Check the "Use Automatic IP Address" box to AudioFetch receive its' IP address automatically (from the network's DHCP server). Or uncheck this box and enter values for:

Manual IP Address Subnet Mask Gateway

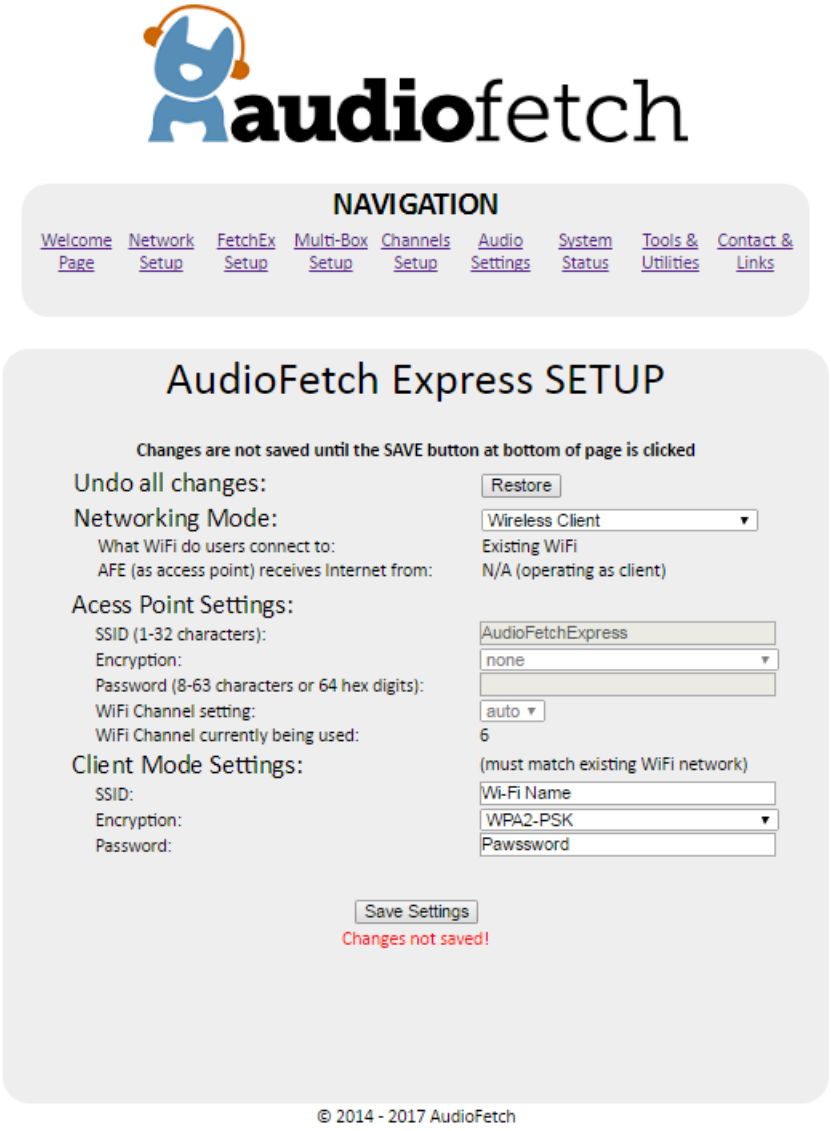
The values entered must be correct for operation with the connected network, contact your IT network administrator for instructions if needed.

After any changes are made on the **NETWORK SETUP** page, the "Save Settings" button at bottom of page must be clicked, otherwise the new settings will be lost at next power cycle. When this button is clicked, the settings are saved and the AudioFetch Express box will automatically restart. If DHCP assigns a new/different IP address after the restart, then use the Doghouse Utility again to reconnect to the Doghouse.



Wi-Fi Module Network Configuration

The Wi-Fi module networking modes may be selected and configured through the FetchEx Setup Doghouse Page:



There are some important points one must keep in mind when using this page to reconfigure the network settings of the Wi-Fi module:

- Changing to a new Networking Mode will almost certainly cause your browser to disconnect from the Doghouse (after clicking the "Save Settings" button)

    - You will need to reconnect your PC/device to the AFE via the new networking mode, in order to re-establish access to the Doghouse (just like starting from scratch)
- Any mistake made in the settings, could cause the AFE to become inaccessible after the "Save Settings" button is clicked.
- For any problem, best course of action is:
    - Use the red User Button to restore factory defaults in the Wi-Fi Module. (This process is described in the next section)
    - Reconnect to the default AFE Access Point (SSID:AudioFetchExpress)
    - Access the Doghouse
    - Start over again entering the desired new network configuration settings The general steps to reconfigure the network mode through this Doghouse page are:

1. Connect to the AFE and access the Doghouse via the AFE's current networking mode
    a. In **Access Point** mode: Access the Doghouse through the AFE's Wi-Fi network
    b. In **Access Point & Wireless Internet** mode: Access the Doghouse through the AFE's Wi-Fi network
    c. In **Wireless Client** mode: Access the Doghouse through the existing Wi-Fi network
    d. In **Wired Only** mode: Access the Doghouse through the existing Wi-Fi network
2. If for some reason the Doghouse page comes up showing "unspecified" for the Networking Mode, it means the settings have not been read in yet from the Wi-Fi module
    a. This would typically only occur if you've just powered-on the AFE and managed to connect to the Doghouse very quickly
    b. The module settings are read-in approximately 20 seconds after the module is booted up – reason for this is to allow the module time to connect to the existing network (in Client Mode for example) in order to set the current Wi-Fi channel
    c. If this situation ever occurs, just wait a few seconds and then click the "Restore" button, the settings will refresh within a few seconds. If not, then try again. If still not then power-cycle the AFE.
3. Adjust the desired settings
    a. Nothing on this page is activated or saved until the "Save Settings" button is clicked
4. Carefully review the settings
5. Click the "Save Settings" button
6. Review the warning dialog that pops up
7. Click the "OK" button in the warning dialog – this will:

   a. Cause the Status LEDs to begin a "marching" pattern to indicate the save is still in- progress. The march will be: yellow, green, red, repeat….
   b. Save the new settings (they will survive subsequent power cycles)
      i. The save will take some time in the module, the LEDs will continue marching
   c. Then, both AFE and Module will be rebooted
8. After the reboot, the new networking mode should be active
9. If any problem after the reboot (ie: new networking mode doesn't seem to work), then first thing to try is a power cycle.

This Doghouse page is designed to be as foolproof as possible:

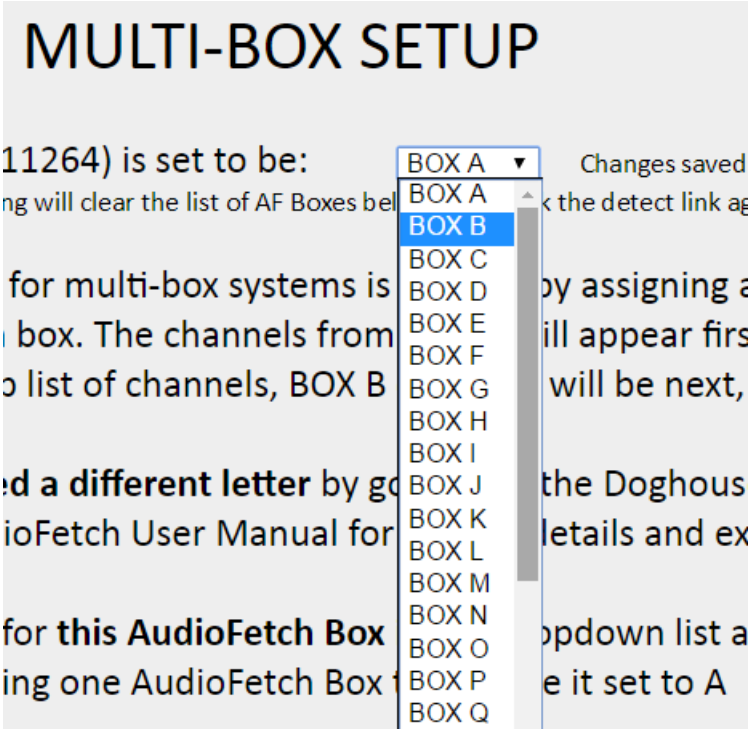
- Only those settings applicable for the selected Networking Mode will be available for editing (automatically grayed out if not applicable)
- Once any setting is changed, a warning notice will appear that the new settings have not been saved. This warning will persist until one of the following occurs
  - Restore button is clicked
  - Save Settings button is clicked and OK is clicked in the warning dialog
- There is a "Restore" button that undoes all the changes
- A warning dialog will automatically display if the Save Settings button is clicked and any required settings are missing
  - For example: if encryption has been enabled but no password entered

Note: The Restore button does a bit more (behind the scenes) than just undo any changes entered on the Doghouse page. It actually performs a full re-read of all configuration settings from the module. So this can be considered a full "refresh" of the displayed info. Mainly this is useful to re-read the current Wi-Fi channel being used, especially when the AFE is operating in Client Mode.

Multi-Box Setup

Where several audio sources exist (multiple TVs, etc.), multiple AudioFetch and or AudioFetch Express boxes can be operated simultaneously on the same network, the AudioFetch App will be able to receive audio from all sources (displayed as different channels on the App).

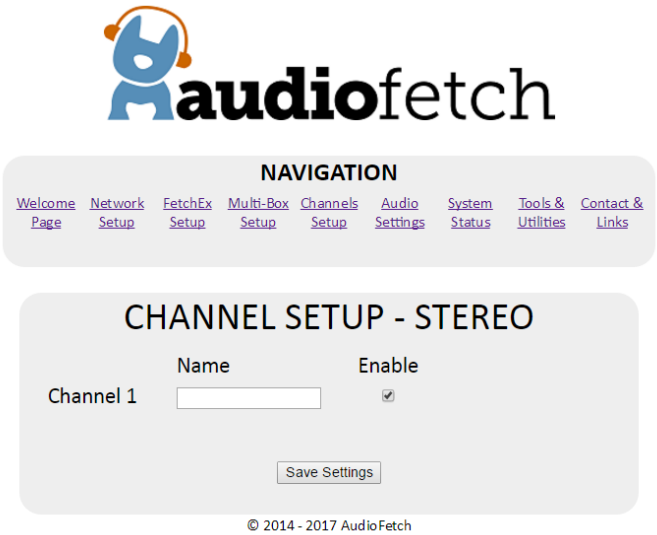
When connecting more than one AudioFetch box to the same network, each box will need to be configured with a unique Multi-Box label in order to be seen independently on the network. The first box should be set to BOX A, the second to BOX B and so on (see Picture of the drop down menu below).



Note: When multiple AudioFetch boxes are ordered to work together on the same network, they will be pre-configured for you and this step will not be necessary.

Channel Setup

The **CHANNEL SETUP** shows the installed channel and allows alternate names/numbers to be assigned. Important: The "Enable" checkbox should be left checked.



By default the channel name field is blank. The App will display its default channel number for this box, as described above.

The channel number displayed by the App may be modified by entering an alternate number in the "Name" field. The App will display ***the first four characters*** of the name entry instead of the usual channel number. Letters may also be entered (CBS, ESPN, etc.)

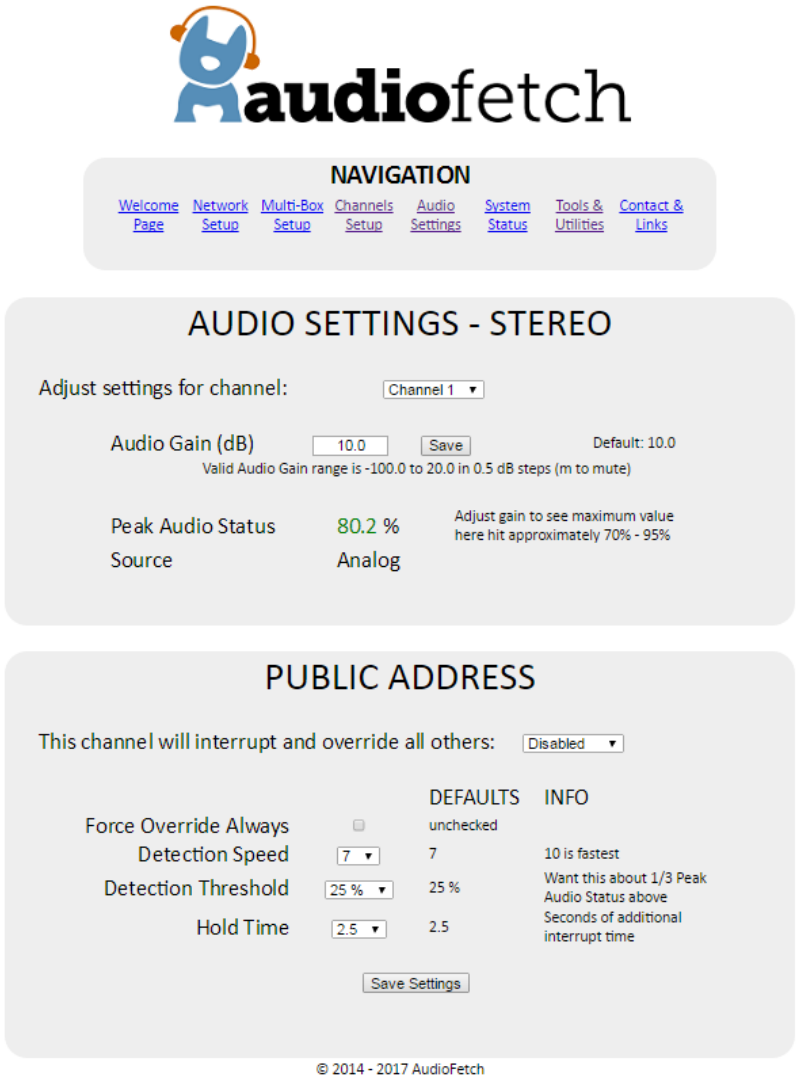
IMPORTANT: The "Save Settings" button must be clicked after any changes are made, otherwise the new settings will be lost at the next power cycle.

Audio Settings

The **Audio Settings** page is used to monitor audio signal level, verify which input is connected/active, and to provide audio gain adjustment.

The current audio status (signal level, active input source) is displayed for the channel selected from the drop-down list (in AudioFetch Express only Channel 1 is available), and allows the gain to be adjusted. Status begins updating only after AudioFetch has connected to the network, therefore when using this page be sure

the AudioFetch Express box is connected to a working network (or operating in Access Point Mode).



To set the Audio Gain:

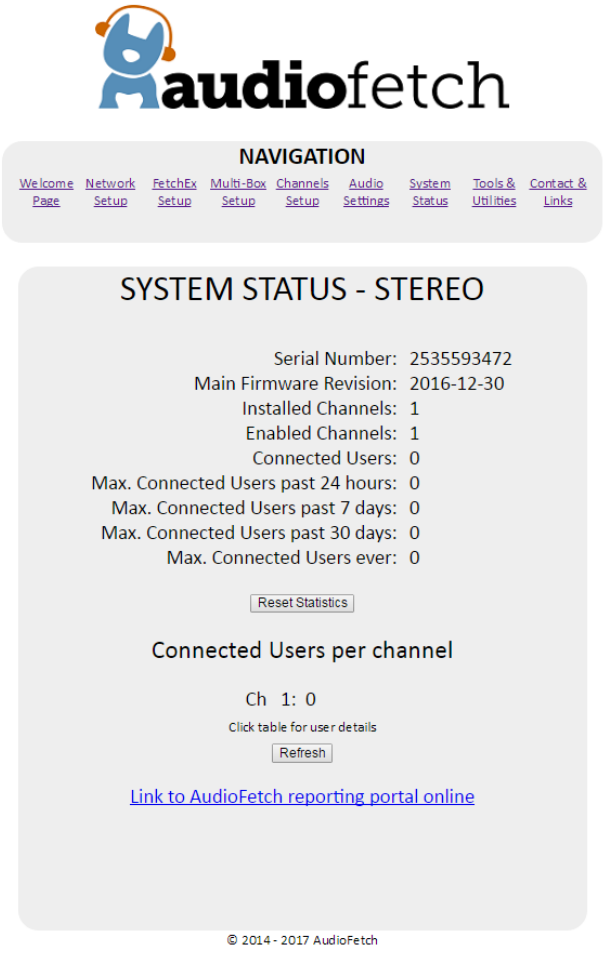
1. Select the desired channel to adjust from the drop-down list
2. Monitor the Peak Audio Status number, if an active audio source is connected then it will constantly change.
    a. If it remains at 0% then check the audio connections, something is likely wrong in the cabling or audio source
3. Optimum Peak Audio Status is when the status hits 70% to 90% at its maximum

4. If Peak Audio Status is too low or too high, enter a new value for Audio Gain. Values entered can be numbers like 7 or 9.0 or 12.5 (the tenths digit can only be "0" or "5"). Acceptable range is -100.0 to 20.0. Press the Enter key or click the "Save" button to save the new gain value.
    a. After saving, you should notice a corresponding change in the Peak Audio Status level immediately
    b. Keep adjusting the Audio Gain until Peak Audio Status is within optimum range.

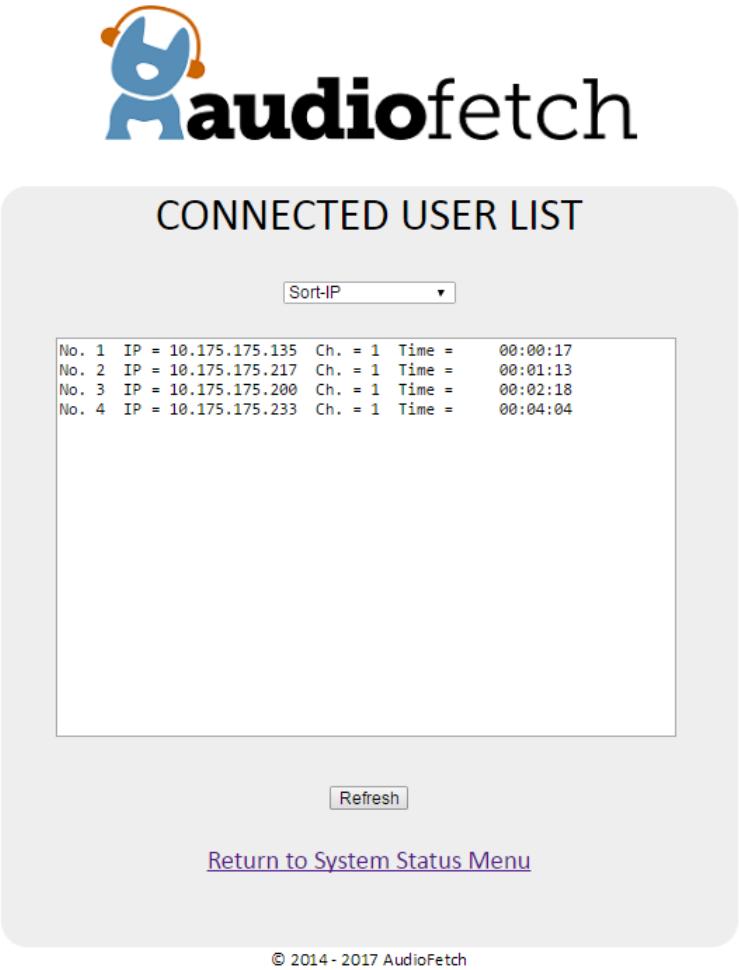
System Status

The **System Status** page shows basic information about the system and connected users (see example on next page). Not all information is refreshed automatically, click the "Refresh" button at the bottom of the page to update the display of latest status.

Click the "Reset Statistics" button to reset the general statistics in the upper area.



Click anywhere in the “Connected Users per channel” area and a detailed list of currently connected users is displayed with various sorting options provided by the drop-down selector:

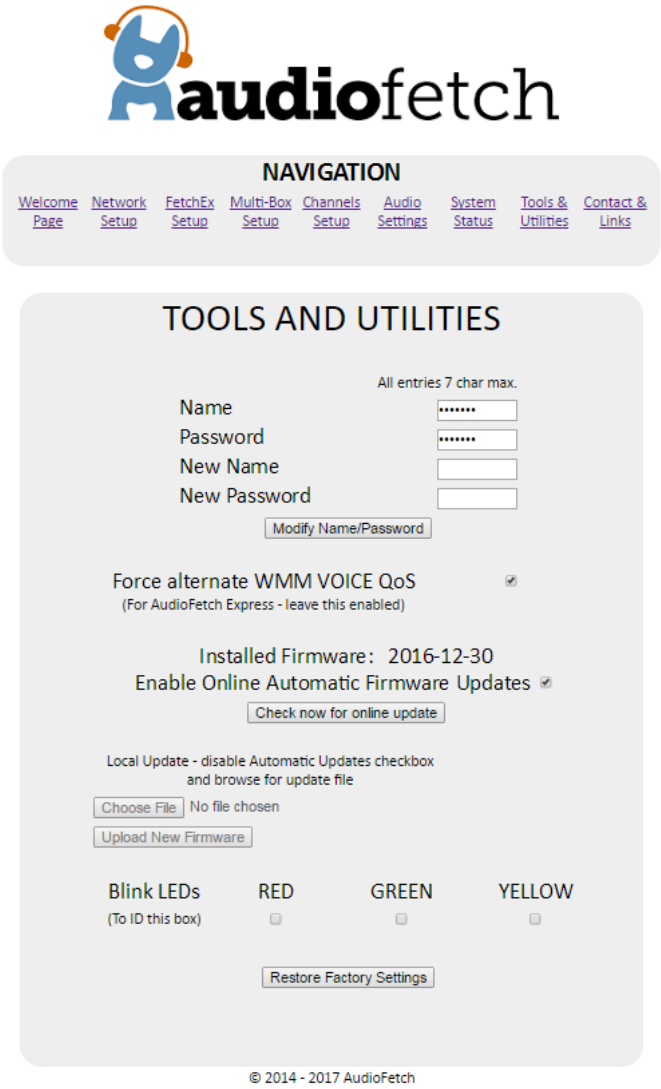


AudioFetch provides additional monitoring statistics online, click the link at the bottom of the page to access the login page for the online reporting service. Contact AudioFetch support if you have lost or forgotten your online login credentials.

Tools & Utilities

The **Tools and Utilities** page provides means to change the Doghouse username/password and options for how firmware updates are delivered to the AudioFetch box.

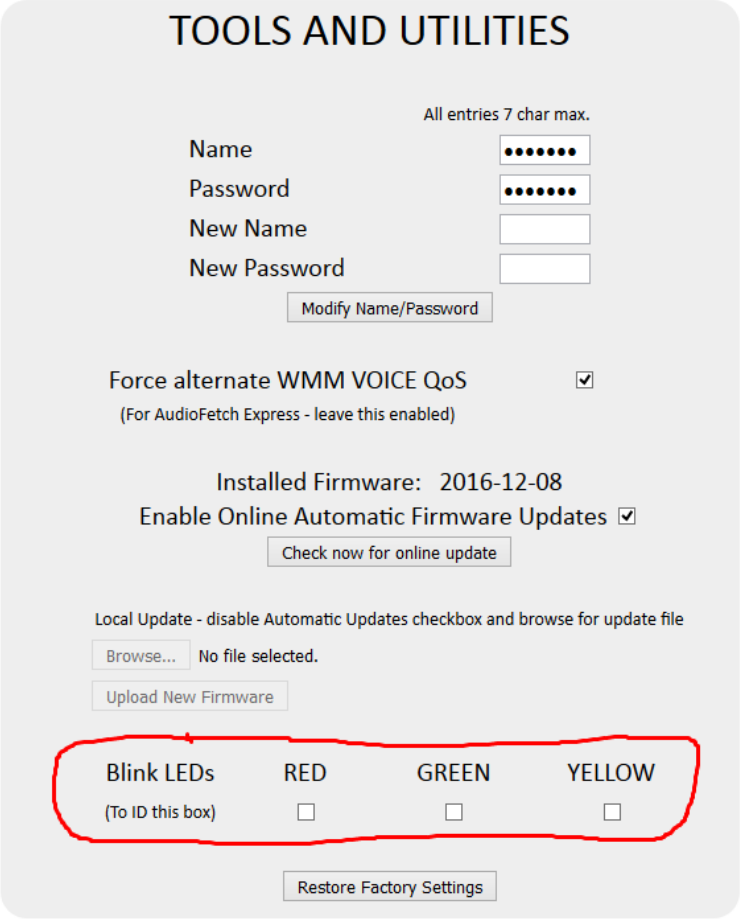
To change username/password, enter the current credentials into the first two boxes, then enter the new username/password into the last two boxes and click the "Modify Name/Password" button.



Other Features in AFE Doghouse

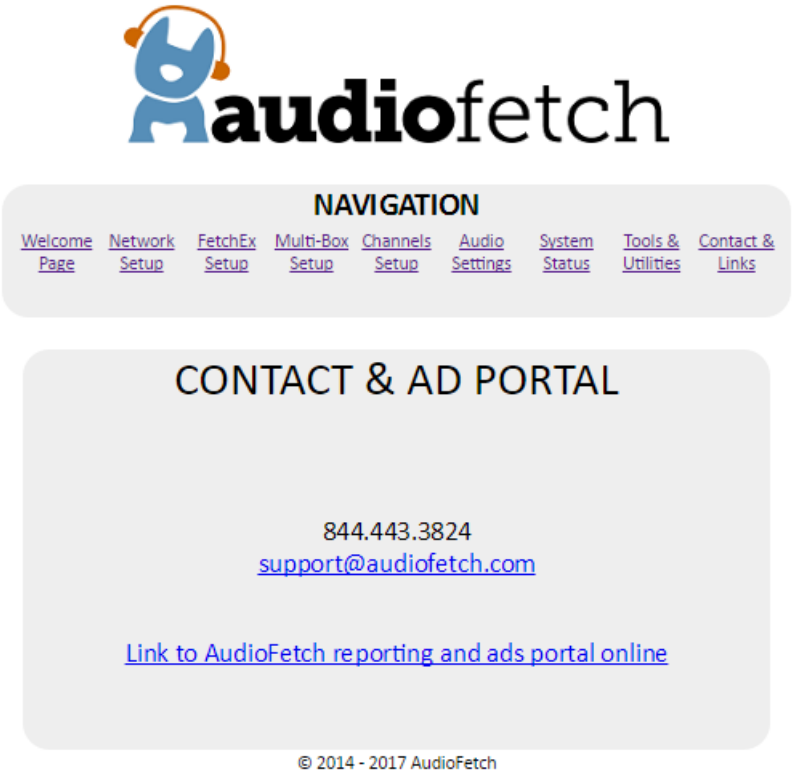
The red status LED operates as an audio clipping indicator automatically during normal operation. It will turn on whenever the audio signal level is above 90% of maximum (clipping) level. This is especially useful when operating the AFE with a microphone.

The Doghouse "Tools and Utilities" page contains a "blink the status LEDs" feature:



The check boxes can be enabled/disabled independently causing any of the Status LEDs to blink at a slow rate. This is just a convenience feature which allows one to identify with certainty which physical AFE the current Doghouse applies to, especially useful if there are multiple AFEs connected to a network.

The **CONTACT & LINKS** page contains contact information in case support is required, as well as a link to the online portal.



6. Restoring Factory Defaults

Procedure:

1. Power up the AFE and allow it to fully boot (about 35 seconds)
2. Press and hold the red User Button until both green and yellow status LEDs begin flashing
    - It will take about 5 seconds of continuous press before the LEDs begin flashing
        - All three status LEDs will turn off during this 5 seconds
    - If the button is released during the 5 second period when all three status LEDs are off, AFE operation will resume normally with no restore of defaults.
3. When both green and yellow status LEDs are flashing together, it indicates the window is "open" for selecting a factory restore for ***both AFE and Wi-Fi Module***.
    - Select this option by releasing the button during the time both green and yellow LEDs are flashing together. This does not execute the restore, it merely "selects" it. The selection is indicated by both green & yellow LEDs turning on solid, and the red LED turns on also

– to indicate this selection is ready to be executed.

4. Or, instead of releasing the button, continue pressing the button and eventually (about 4 seconds later) the yellow LED will start flashing by itself, it indicates the window is "open" for selecting a factory restore for ***only the Wi-Fi module.***
    - Select this option by releasing the button during the time when only the yellow LED is flashing. This does not execute the restore, it merely "selects" it. The selection is indicated by yellow LED turning on solid, and the red LED turns on also – to indicate this selection is ready to be executed.
5. Or, continue pressing the button and eventually (about 4 seconds later) the green LED will start flashing by itself, it indicates the window is "open" for selecting a factory restore for ***only the AFE*** (all items in the AudioFetch Doghouse).
    - Select this option by releasing the button during the time when only the green LED is flashing. This does not execute the restore, it merely "selects" it. The selection is indicated by yellow LED turning on solid, and the red LED turns on also – to indicate this selection is ready to be executed.
6. Continuing to press the button down will cause the LEDs to cycle back through #3-5, in an endless loop (until button is released).
7. Once the button is released the corresponding selection is display with constant-on LEDs:
    - red, green, yellow all on means the selection is: restore both AFE and Wi-Fi defaults
    - red, yellow on means the selection is: restore only Wi-Fi defaults
    - red, green on means the selection is: restore only AFE defaults
8. The selection indication will remain on for approximately 5 seconds. If the button is pressed again during this 5 second window, the selected restore will be executed. If the button is not pressed, after 5 seconds the AFE will return to normal operation (LEDs will go back to normal operating mode).
9. After the restore is executed, both Wi-Fi module and AFE will be restarted. Total process takes about 35 seconds.

Note: There is a "Restore Factory Defaults" link/button in the Doghouse, this will restore AFE defaults only, and will not affect the Wi-Fi module.

7. Reference Information - Network Traffic

When AudioFetch Express is used in Access Point Mode, the built-in Wi-Fi is compatible with all required network traffic to/from connected mobile devices.

However when Client Mode is used to connect to a pre-existing network, it is important to ensure that the required network traffic is able to flow between AudioFetch Express and mobile devices running the AudioFetch App. In some cases minor adjustments to network settings may be necessary, this information is provided to help IT personnel determine and make the required adjustments.

Traffic direction: Mobile Device (AudioFetch app) → AudioFetch Express device:

Protocol	source port	dest port	
UDP multicast (239.255.255.250)	p_1 *	1900	(this is primary SSDP discovery)
TCP	p_2 *	80	
TCP	p_3 *	6971	
UDP broadcast (255.255.255.255)	30981	30981	(used for fallback discovery)
DNS LOOKUP	(usual for DNS)	(usual)	(used for fallback discovery)

Traffic direction: AudioFetch device → Mobile Device (AudioFetch app):

Protocol	source port	dest port	
UDP	1900	p_1 *	
TCP	80	p_2 *	
TCP	6971	p_3 *	
UDP	6970	6970	This is the audio stream
UDP multicast (239.255.255.250)	1900	1900	(used for SSDP and fallback discovery)
UDP	30981	30981	(used for fallback discovery)
DNS RESPONSE	(usual for DNS)	(usual)	(used for fallback discovery)

* p_1 and p_2 indicate port numbers which have been chosen by the mobile device's operating system and typically are different each time the app runs

Fallback discovery traffic is required only if the network blocks standard SSDP discovery mechanism. If SSDP fails then AudioFetch will automatically fall back to alternate discovery mechanisms.

In some cases, with a complex network and tight security restrictions on traffic, a DNS discovery method is required. If so, please contact AudioFetch for information about making minor adjustments to your network's DNS server entries.

8. Regulatory Compliance Statements

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This product meets the applicable Industry Canada technical specifications.