

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:

Proposal Number : _____

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

Specific Cables Requested : _____

Note: If no specific cables or lengths are requested the following will be provided:
6' RCA to 3.5mm jack (audio), USB A to mini-B (for power)

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.

2018-08-27



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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 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.

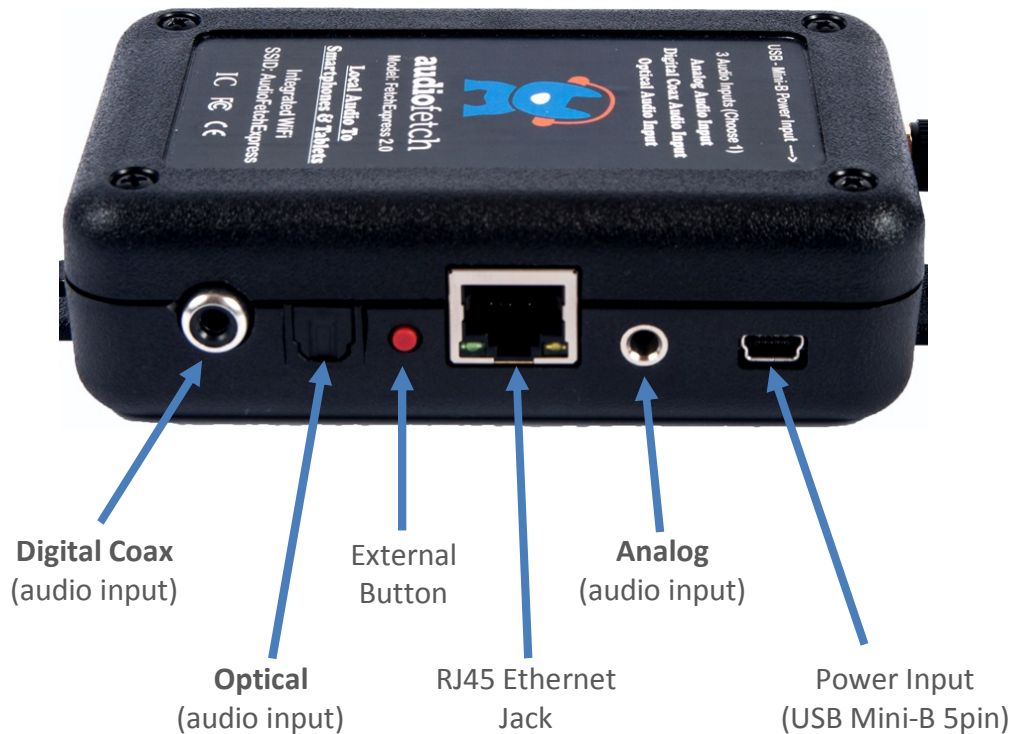
3 The Free AudioFetch Ad Portal

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:

4 AudioFetch Express Connectors and External Button



5 Connecting Power

The AudioFetch Express receives power from any USB port capable of providing 500mA (or more) of current. Most USB ports on the back of TVs are capable of providing this power. For non-TV applications a USB power adapter can be included, please discuss with AudioFetch when placing an order.

Connect the provided USB-A to Mini-B 5pin cable between the AudioFetch Express Power Input connector and a USB port capable of providing 500mA. There is no power switch, the AudioFetch Express will power up whenever the USB port is powered. Should the AudioFetch Express need to be power-cycled, simply unplug the USB cable for one or more seconds then plug it back in again.

Longer USB cables can be ordered from: www.monoprice.com or www.amazon.com Be sure to search for and order only cables with **24AWG conductors for the power lines**, as smaller conductors may cause problems with AudioFetch Express operation. Here is an example for an acceptable 15-ft USB cable:

Amazon Link to: [15-Foot USB 2.0 A Male to Mini-B 5pin Male 28/24AWG Cable](#)

6 Connecting AudioFetch Express to Audio Sources

Connect an audio source to one of the 3 input options, **choose only one input connection**.

Two popular analog connections on TVs are RCA (one red and one white) or 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.

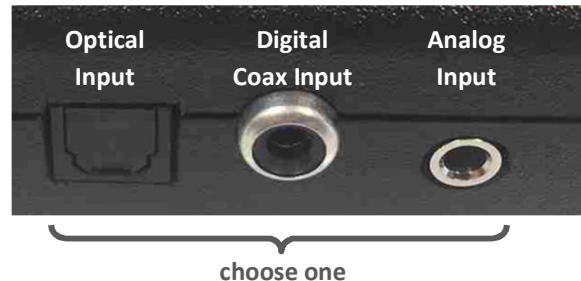
Note that RCA and digital coax connections are not the same. A digital coax output (on TV, etc.) cannot connect into the AudioFetch Express analog input. An RCA analog output (from TV, etc.) cannot connect into the AudioFetch Express digital coax input. The configuration management pages can be logged 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 Types



7 AudioFetch Express LED Indicators



LED

Power

WiFi

Status – RED

Status – GREEN

Status – YELLOW

Description

On when unit has power

On when WiFi is operating
Blinking indicates WiFi activity

Blinking when no connection to network
Off when connected to network

Off when no connection to network yet
On when connected to network

Normally off
Rarely, indicates firmware update active (on)
Contact AudioFetch support if flashing continuously

During boot-up (takes about 35 seconds) the LEDs will sequence through different indications. **After boot-up is complete** the normal operating indication is:

Power WiFi Status
● ● ○ ● ○

(Power, WiFi, and Status-GREEN on, all others off)

NOTES: WiFi may blink to indicate activity on the WiFi connection – this is normal
 WiFi will remain off if AudioFetch Express is configured for wired-only operation

Quick Troubleshooting:

In Wireless Client mode: If Status-RED remains blinking indefinitely, the FetchExpress cannot connect into your existing WiFi network. Things to try or check:

- Check that your existing WiFi network is on and other devices can connect successfully
- If your WiFi is configured for Captive Portal (there is a splash screen or login page) then the both MAC addresses of the AudioFetch Express must be added your network's whitelist of clients allowed to bypass the captive portal.
- Try power cycling the AudioFetch Express (as troubleshooting step)
- Try repositioning the AudioFetch Express or your Access Point/Router to check if WiFi signal strength is weak
- Check that your WiFi SSID and password are correctly configured in the AudioFetch Express – double check information provided to AudioFetch when ordered and if necessary re-configure the SSID/password settings as described in section 11 [Changing SSID/password in Wireless Client Mode](#)

Rarely, AudioFetch Express will receive firmware updates (if connected to the internet). During an update, the yellow status LED will flash irregularly to indicate download in progress followed by the status LEDs going through a number of different sequences (not described here) and finally the AudioFetch Express will reboot and return to normal operation. Note that configuration settings are preserved through this firmware update process.

8 Networking Modes

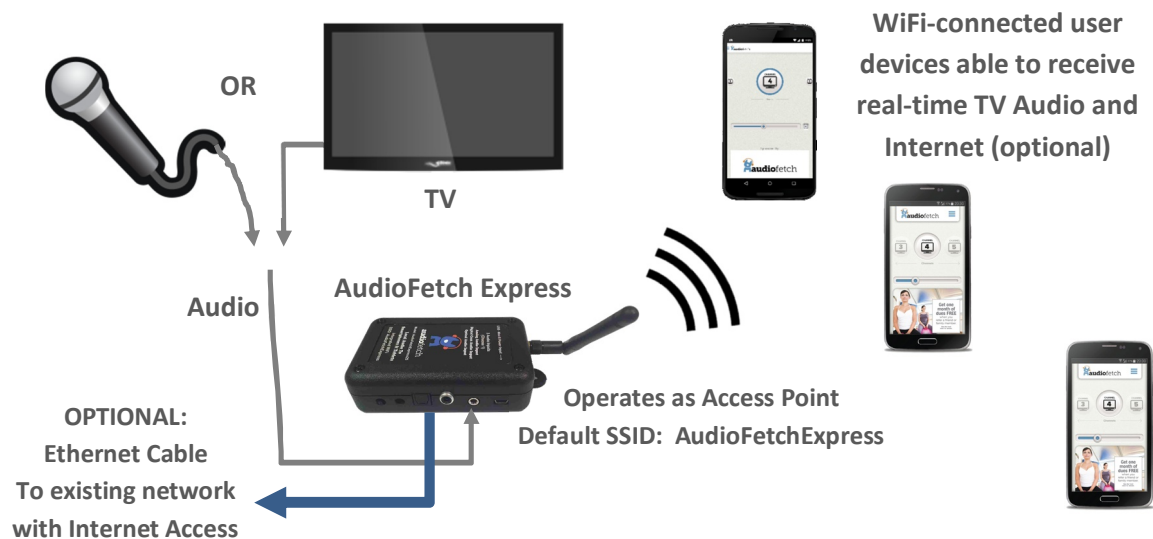
The AudioFetch Express contains an internal WiFi module capable of operating as an Access Point or connecting into existing WiFi networks. An Ethernet jack is also provided for connections into wired networks. Four networking modes are supported:

- A) Access Point (with optional wired Ethernet connection for Internet access)
- B) Access Point with Wireless Internet
- C) Wireless Client
- D) Wired Only

A) Access Point

The AudioFetch Express operates as an Access Point and provides its own WiFi network. Mobile devices receive audio by connecting to this WiFi network.

Optional: Internet access can be provided by connecting the AudioFetch Express Ethernet port into a pre-existing network which has internet access (like a WAN connection on a consumer wireless router)



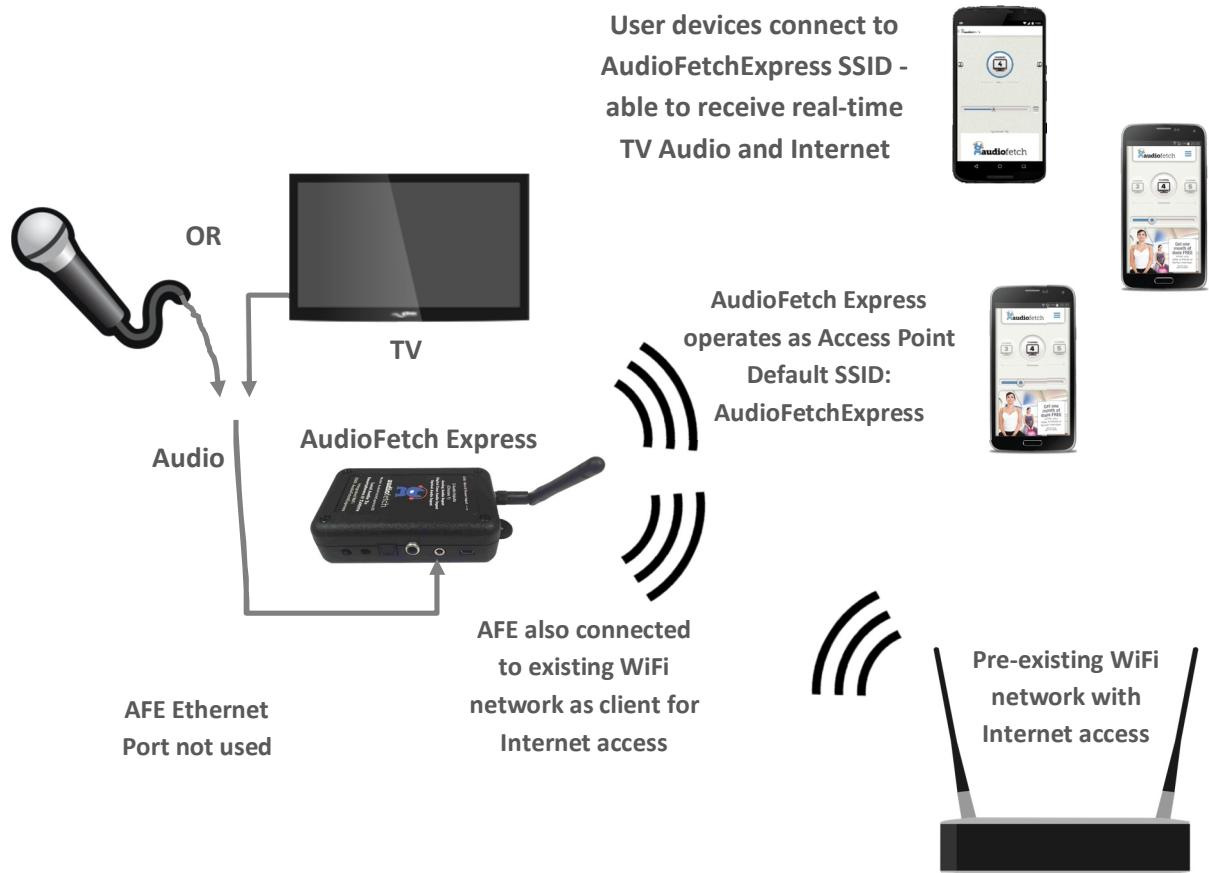
Note: This is the default networking mode – it will be active after factory defaults are restored using the External Button as described in section 10 Restoring Factory Defaults with External Button.

The default SSID is: AudioFetchExpress with no password

B) Access Point with Wireless Internet

The AudioFetch Express operates as an Access Point and provides its own WiFi network. Mobile devices receive audio by connecting to this WiFi network.

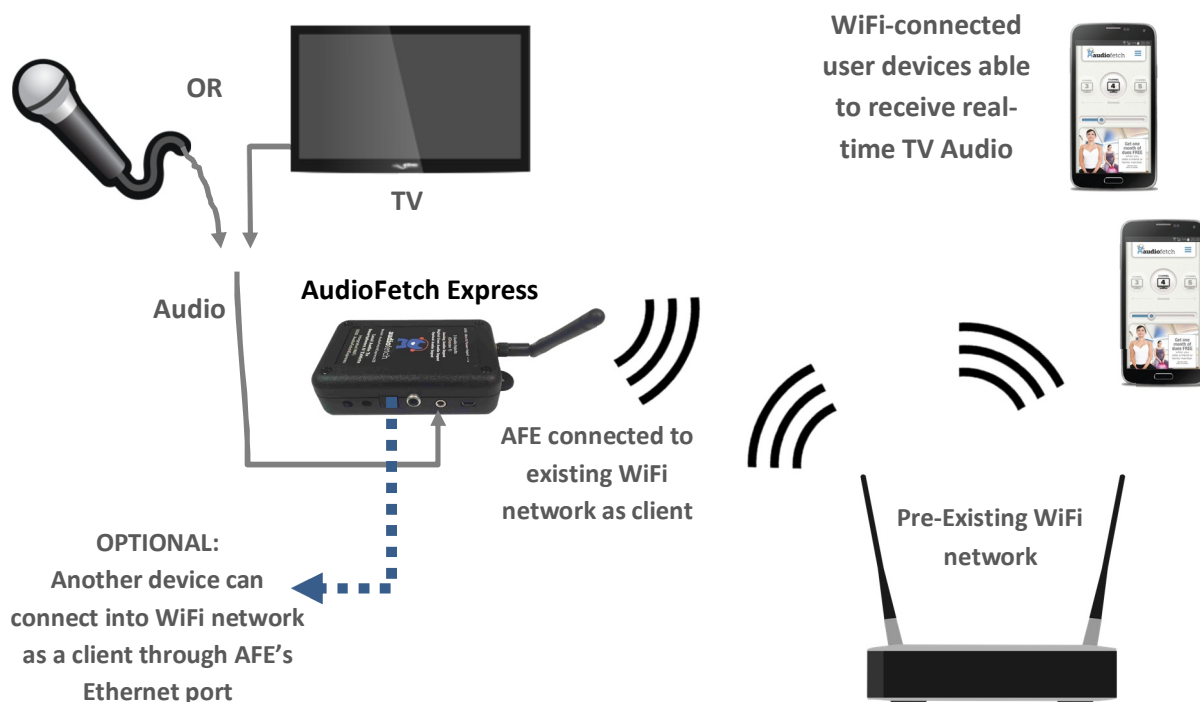
The AudioFetch Express connects as a client into a pre-existing WiFi network to provide internet access.



C) Wireless Client

The AudioFetch Express connects to a pre-existing WiFi network as a client. Mobile devices receive audio by connecting to the pre-existing WiFi network.

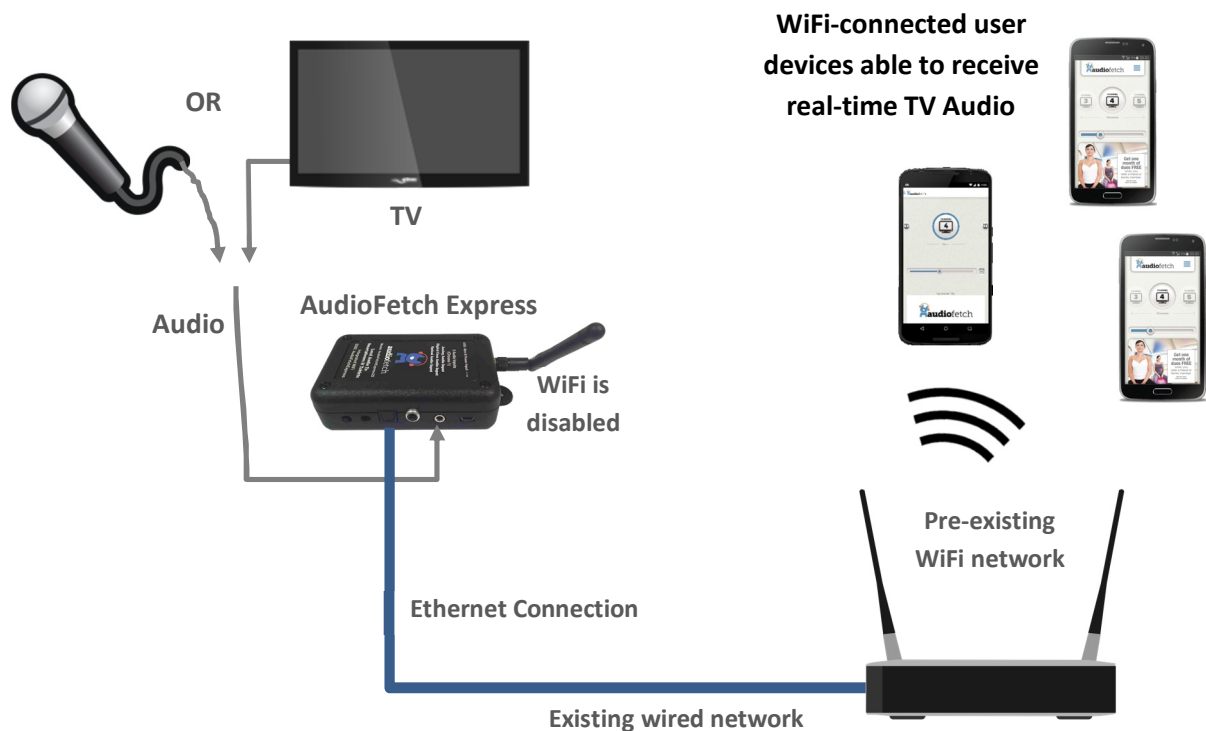
The pre-existing WiFi network provides internet access.



D) Wired Only

The AudioFetch Express connects to a pre-existing wired network via its Ethernet connector. Mobile devices receive audio by connecting to the pre-existing WiFi network.

The pre-existing WiFi network provides internet access.



Typically, AudioFetch Express is shipped pre-configured for correct network mode, but only if complete information is provided about your network and installation requirements when ordering.

Networking mode can be re-configured in the Doghouse if needed

9 Configuration Management – “The Doghouse”

9.1 Introduction to the Doghouse and Doghouse Utility App

Configuration settings (“The Doghouse”) for each AudioFetch box can be viewed using a web browser on a device (PC, tablet, mobile phone, however not compatible with MAC) ***which must be connected to the same the same WiFi network as AudioFetch Express.***

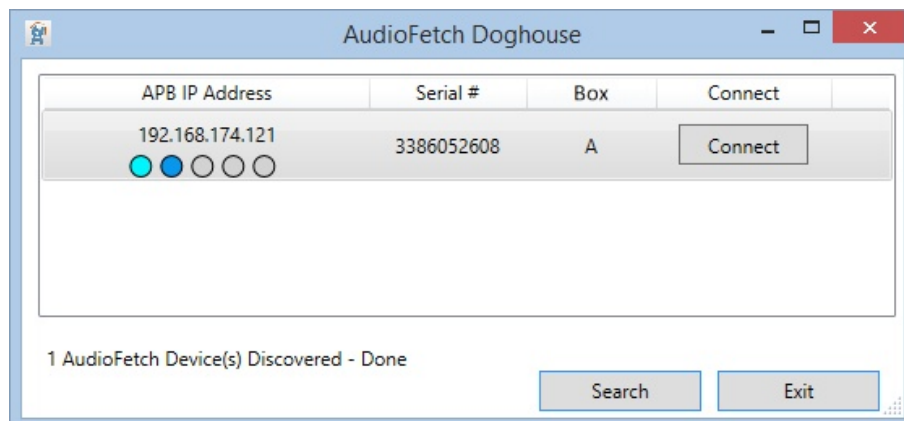
Most applications do not require access to the Doghouse since the default settings are usually adequate. When adjustments are required, please review information in this section.

The “Doghouse Utility App” can be used to search for AudioFetch Express boxes on the network and provide easy one-click access to the Doghouse for each box. The Doghouse Utility App is available for Windows, Android, and iOS (not available for MAC), further information and install links can be found here:

www.audiofetch.com/doghouse

First, ensure your device (PC, mobile phone, tablet, etc.) is connected to the same network as AudioFetch Express.

On a Windows device: Install then run the Windows version Doghouse Utility to locate AudioFetch box(s) on the network. The Windows version Doghouse Utility looks like this:



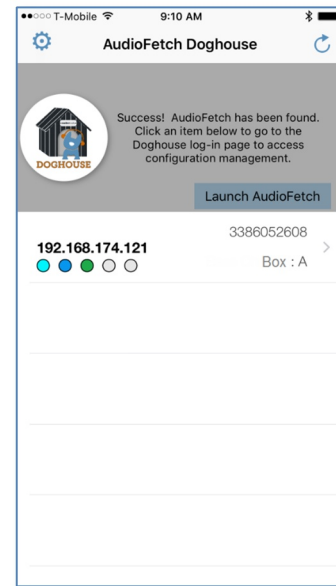
On Android or Apple (iOS) devices: Search and install “AudioFetch Doghouse” in the Google Play or Apple App store, direct links to the store locations are provided on the web page referenced above.

Here is an example screenshot of the Apple version Doghouse App (Android looks similar):

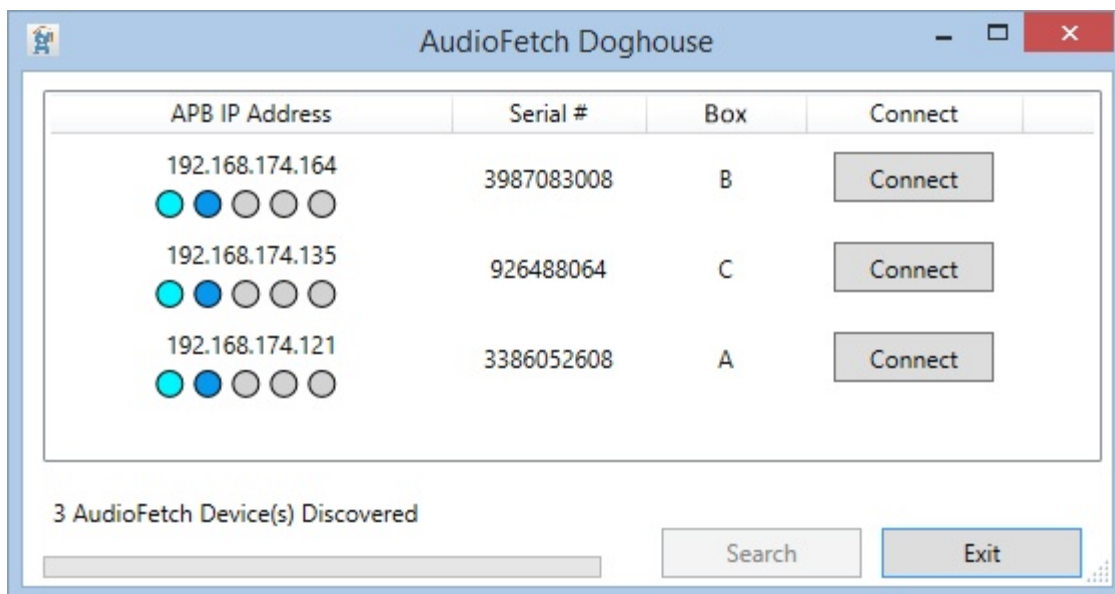
During detection (about 10-20 seconds)



After AudioFetch box(s) detected



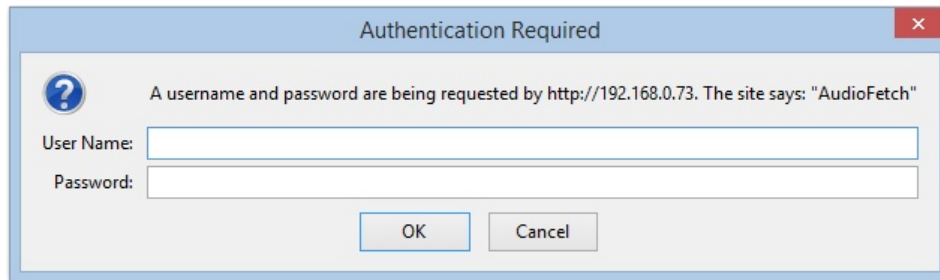
In AudioFetch systems employing more than one AudioFetch Express box (or a mix of standard/wired AudioFetch boxes and AudioFetch Express boxes), all of the boxes present should appear in the listing, like this example from the Windows Doghouse Utility:



Each box has its own configuration settings, in other words each box has its own independent Doghouse. When installing a system with multiple boxes, each Doghouse must be accessed in order to configure each of the boxes correctly.

9.2 Doghouse Login

Once the AudioFetch Express box(s) are displayed, click the “Connect” button (Windows) or tap in the information area for the box (Android/Apple) to open the Doghouse for the desired box in your default web browser. A login dialog will be displayed (this is the Windows version, Android/Apple will look different but request the same info):




The dialog box is titled "Authentication Required" and contains a question mark icon. The text inside reads: "A username and password are being requested by http://192.168.0.73. The site says: 'AudioFetch'". Below this text are two input fields: "User Name:" and "Password:". At the bottom of the dialog are two buttons: "OK" and "Cancel".

Default username is: **ADMIN** (all upper case)
Default password is: **admin** (all lower case)

9.3 WELCOME PAGE and basic navigation

After successful login you will see a welcome page similar to below:



audiofetch

DOGHOUSE NAVIGATION

Welcome Page	Network Setup	Multi-Box Setup	Channels Setup	Audio Settings	System Status	Tools & Utilities	Contact & Links
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WELCOME

Welcome to the AudioFetch Doghouse
(configuration management)

Navigate using the links above

[Link to AudioFetch reporting and ads portal online](#)

Click the links in the **NAVIGATION** section to access each of the configuration pages.

9.4 NETWORK SETUP page

The **NETWORK SETUP** Doghouse Page configures the network operating modes and provides additional network-related information (such as MAC addresses):

DOGHOUSE NAVIGATION

[Welcome Page](#)
[Network Setup](#)
[Multi-Box Setup](#)
[Channels Setup](#)
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[System Status](#)
[Tools & Utilities](#)
[Contact & Links](#)

NETWORK SETUP - FetchExpress

Changes are not saved until the SAVE button at bottom of page is clicked

Undo all changes

WiFi Module Information

Firmware Version: 2017-02-10x

WiFi MAC Address: 28:A1:EB:FD:05:B4

Ethernet Port MAC Address: 28:A1:EB:FD:05:B3

Operating Mode

What WiFi do users connect to: Access Point & Wireless Internet

FetchExpress gets Internet from: AudioFetch

Access Point Settings

SSID (1-32 characters): AudioFetchExpress

Encryption: none

Password (8-63 characters or 64 hex digits):

WiFi Channel setting: auto

WiFi Channel currently being used: 6

Client Mode Settings

SSID (must be exact!): YourNetworkSSID

Encryption: WPA2-PSK

Password: YourNetworkPassword

Internal AudioFetch Server Settings

Use Automatic IP Address: ☒

Manual IP Address: 192.168.174.119

Subnet Mask (being used): 255.255.255.0

Gateway (being used): 192.168.174.1

IP Address (being used): 192.168.174.104

Internal AudioFetch MAC Address: 00:1E:C0:AE:AC:E4

Save Settings

Restore

Selection Options

Access Point (default)

Access Point & Wireless Internet

Wireless Client

Wired Only

Rename the Access Point WiFi SSID if desired

Selection Options

none (default)

WPA-PSK

WPA2-PSK (this is most common)

WPA-PSK/WPA2-PSK Mixed Mode

Enter password if encryption is enabled

Selection Options

auto (default)

1 - 11

Enter your network's WiFi SSID here

Selection Options

none (default)

WPA-PSK

WPA2-PSK (this is most common)

WPA-PSK/WPA2-PSK Mixed Mode

Select what matches your network settings

Enter your network's WiFi password here

NOTE: Some selection/entry boxes will be disabled when different Operating Modes are selected

Important points when using the NETWORK SETUP page to reconfigure the network settings:

- 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 AudioFetch Express 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 AudioFetch Express to become inaccessible after the “Save Settings” button is clicked
- For any problem, best course of action is:
 - Use the red External Button to restore factory defaults in the Wi-Fi Module as described in section 10 Restoring Factory Defaults with External Button
 - Reconnect to the default AudioFetch Express Access Point (SSID: AudioFetchExpress)
 - Access the Doghouse
 - Start over again entering the desired new network configuration settings

Steps to reconfigure the network mode:

1. Connect to the AudioFetch Express (AFE) and access the Doghouse via the 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 pre-existing Wi-Fi network
 - d. In **Wired Only** mode: Access the Doghouse through the pre-existing wired or Wi-Fi network
2. Adjust the desired settings
 - a. Nothing is activated or saved until the “Save Settings” button is clicked
3. Carefully review the settings
4. Click the “Save Settings” button and review the warning dialog that pops up
5. Click the “OK” button in the warning dialog
 - a. 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. The save will take some time, be patient and **do not disconnect power**
 - c. Then the AudioFetch Express will automatically restart and should begin operating in the new mode
6. After the reboot, the new networking mode should be active and if correctly configured the status LEDs should indicate the ready condition
7. If any problem after the reboot (ie: new networking mode doesn’t seem to work), then:
 - a. Try is a power cycle (wait at least 35 seconds after cycling power before trying to access again)
 - b. Use the red External Button to restore factory defaults in the Wi-Fi Module as described in section 10 Restoring Factory Defaults with External Button, then repeat this procedure

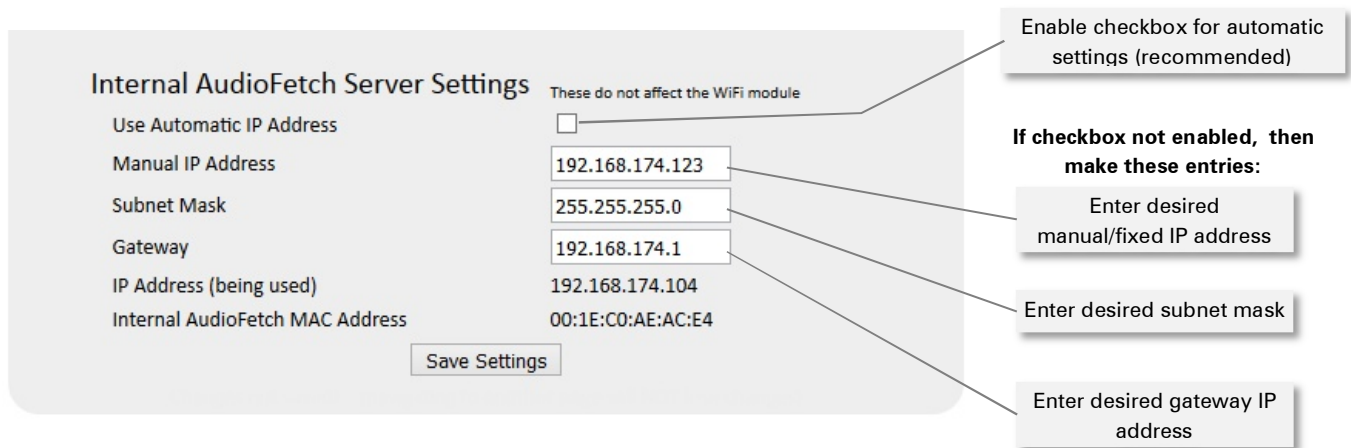
The NETWORK SETUP page is designed to be as foolproof as possible:

- 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

The lower section of the **NETWORK SETUP** page configures settings of the internal AudioFetch audio server. Check “Use Automatic IP Address” to have the AudioFetch audio server receive its’ IP address automatically (from the network’s DHCP server), this is the recommended setting. Or uncheck and enter values for: Manual IP Address, Subnet Mask, and Gateway



Internal AudioFetch Server Settings

These do not affect the WiFi module

Use Automatic IP Address	<input type="checkbox"/>
Manual IP Address	192.168.174.123
Subnet Mask	255.255.255.0
Gateway	192.168.174.1
IP Address (being used)	192.168.174.104
Internal AudioFetch MAC Address	00:1E:C0:AE:AC:E4

Save Settings

Enable checkbox for automatic settings (recommended)

If checkbox not enabled, then make these entries:

- Enter desired manual/fixed IP address
- Enter desired subnet mask
- Enter desired gateway IP address

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

Usually it is best to leave “Use Automatic IP Address” enabled and let the network’s DHCP server assign an IP address. It is not necessary to enter a manual IP address when the network’s DHCP server has been configured with a reservation IP address for the AudioFetch Box, just leave Use Automatic IP Address enabled – the DHCP server should be able to assign the reserved IP address based on the AudioFetch Express’s MAC address.

IMPORTANT NOTE FOR IT PERSONNEL: In Wireless Client networking mode, the AudioFetch Express will present two distinct clients to the pre-existing WiFi network. One client is the internal WiFi module (operating in a bridging mode) and the other client is the AudioFetch Express device (which serves the audio). **Both clients will request (and should receive) individual IP addresses from the DHCP server.** If using Wireless Client mode and experiencing connectivity issues please request the AudioFetch App Note: “AudioFetch Express Wireless Client Networking Info,” which explains in greater detail. Contact AudioFetch Technical Support if further assistance is required.

After any changes are made on the **NETWORK SETUP** page, the “Save Settings” button at bottom of page must be clicked in order for the new settings to take effect. When the Save Settings button is clicked, the settings are saved and then 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 re-connect to the Doghouse (if needed).

9.5 MULTI-BOX SETUP page

Where more audio channels are required, multiple AudioFetch Express (and/or wired AudioFetch) boxes can be connected to the same network (called Multi-Box installation). Up to 32 boxes total may be used in an AudioFetch system. When multiple AudioFetch Express units are used in Wireless Client mode most WiFi Access Points will support a smaller quantity simultaneously. The recommended maximum number of AudioFetch Express units connected in Wireless Client mode is 8.

The **MULTI-BOX SETUP** page is used to configure AudioFetch to work correctly in multi-box installations.

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[Network Setup](#)
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[Audio Settings](#)
[System Status](#)
[Tools & Utilities](#)
[Contact & Links](#)

Selection Options

Box A
⋮
Box AF

MULTI-BOX SETUP

This box (SN: 15870208) is set to be: BOX A Changes saved immediately
(changing this setting will clear the list of AF Boxes below - just click the detect link again)

Channel ordering for multi-box systems is defined by assigning a letter (A, B, C, D) to each box. The channels from BOX A will appear first in the AudioFetch App list of channels, BOX B channels will be next, etc. **Each box must be assigned a different letter** by going into the Doghouse for each box, please see the AudioFetch User Manual for further details and examples. Select the letter for **this AudioFetch Box** in the dropdown list above, if only using one AudioFetch Box then leave it set to A.

[Click here to detect other AudioFetch Boxes](#)

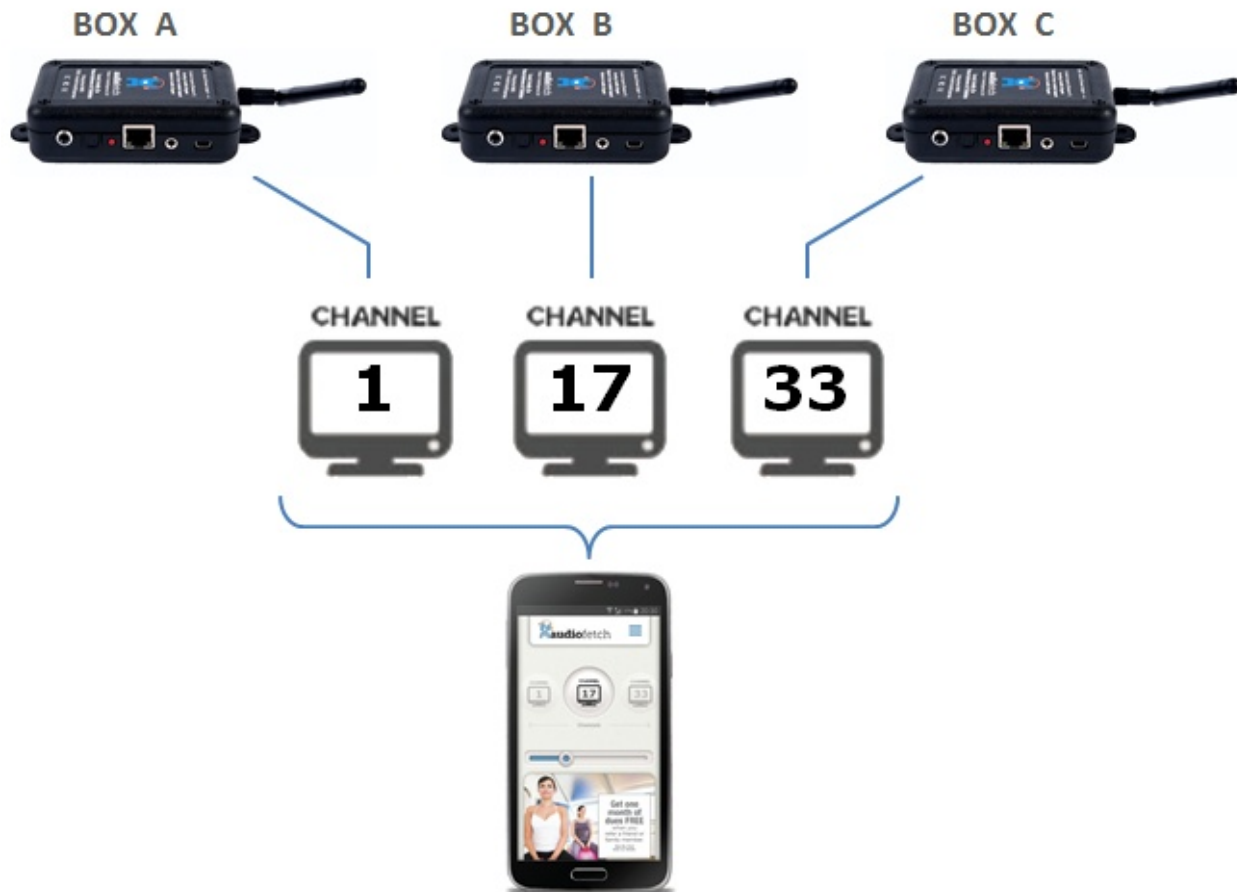
Must be on the same subnet to detect, network must support SSDP.
If the same box (sn) appears twice, please click the link again to re-scan.

IP Address	MAC Address	Serial Number	Setting
10.175.175.147	D8:80:39:D5:38:A9	15870208	BOX A
--	--	--	--
--	--	--	--

In multi-box installations, the AudioFetch App needs to know how to coordinate the order of channels it displays with channels from each of the AudioFetch boxes present. This is accomplished by designating the AudioFetch Express (and any standard/wired) boxes present as:

BOX A BOX B BOX C BOX D ... (32 choices, up to BOX AF)

The channels from BOX A will be displayed first by the AudioFetch App, channels from BOX B will be displayed next, etc. For example, in a 3-box installation (three AudioFetch Express boxes) where the boxes have been designated: BOX A, BOX B, and BOX C, channels will be displayed by the App like this:



Note that the system default channel numbers are shown in the example above – channel 17 is displayed for BOX B and channel 33 for BOX C due to system compatibility requirements with other types of AudioFetch boxes (such as a 16-channel box). If channel names have been assigned in each of the AudioFetch Express Doghouses, the channel names will be displayed by the app instead of default channel numbers shown above, but the ordering will still be determined by the BOX A/B/C designation.

Each AudioFetch Express box must be separately configured with a BOX A/B/C/D... designation. If two or more boxes have the same designation letter, then the system will not operate correctly. Configuring unique BOX designations is mandatory in multi-box installations!

IMPORTANT: Each box must have a different designation!

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

To configure the boxes in a multi-box installation:

1. Decide how you want the channels from each box to be ordered by the App (which box's channels display first, second, third, etc.).
2. Use the Doghouse Utility to find/display all of the boxes on the network.
3. Access the Doghouse for the first box (You want the App to display this box's channels first), navigate to the MULTI-BOX SETUP page and use the drop-down selector to select "BOX A", the new setting is saved automatically.
4. Access the Doghouse for the second box, navigate to the MULTI-BOX SETUP page and use the drop-down selector to select "BOX B" (new setting automatically saved).
 - a. NOTE: Each box has its own Doghouse, you must access each box's Doghouse separately.
5. If a third box is present: access the Doghouse for the third box, navigate to the MULTI-BOX SETUP page and use the drop-down selector to select "BOX C"
6. If a fourth box is present: access the Doghouse for the fourth box, navigate to the MULTI-BOX SETUP page and use the drop-down selector to select "BOX D"
7. Continue this procedure for any additional boxes present.

MULTI-BOX SETUP

This box (SN: 926488064) is set to be: BOX C Changes saved immediately
(changing this setting will clear the list of AF Boxes below - just click the detect link again)

Channel ordering for multi-box systems is defined by assigning a letter (A, B, C, D) to each box. The channels from BOX A will appear first in the AudioFetch App list of channels, BOX B channels will be next, etc. **Each box must be assigned a different letter** by going into the Doghouse for each box, please see the AudioFetch User Manual for further details and examples. Select the letter for **this AudioFetch Box** in the dropdown list above, if only using one AudioFetch Box then leave it set to A.

[Click here to detect other AudioFetch Boxes](#)

Must be on the same subnet to detect, network must support SSDP.
If the same box (sn) appears twice, please click the link again to re-scan.

IP Address	MAC Address	Serial Number	Setting
192.168.174.121	00-1e-c0-dd-09-e9	3386052608	BOX A
192.168.174.164	00-1e-c0-ae-bd-c9	3987083008	BOX B
192.168.174.135	d8-80-39-d0-b9-1e	926488064	BOX C
--	--	--	--
--	--	--	--
--	--	--	--

To assist in setup, the Doghouse **MULTI-BOX SETUP** page contains a link to detect and display info about other boxes present on the LAN. Click the link, and then a notification page will appear for about 5 seconds while the other boxes are being detected. Then the **MULTI-BOX SETUP** page will display again with the list of boxes filled out. See the example below which shows the detection results for a 3-box system.

When the drop-down selector is used to change the box designation, the list of other boxes is cleared. In this case just click the detection link again to re-display all the boxes.

After detection, the box setting for each will be displayed as shown above (in the column labeled “Setting”). When configuring a multi-box system, use the detect link to double-check that all boxes have different/unique designations. For example, this display of detected boxes indicates a problem because two boxes are set to the same designation:

IP Address	MAC Address	Serial Number	Setting
192.168.0.73	00-1e-c0-ae-bd-c9	3987083008	BOX A
192.168.0.236	00-1e-c0-dd-10-88	1341657088	BOX A
192.168.0.196	00-1e-c0-ae-ac-e4	123456789	BOX B
--	--	--	--

In this case, one of the conflicting boxes should be changed to BOX C.

Note that other-box detection works only on networks which fully support SSDP discovery protocol. Some network configurations do not, in which case use the Doghouse Utility as an alternative to discover all the boxes on the network and display their box settings.

9.6 CHANNELS SETUP page

The **CHANNELS SETUP** page shows the installed channel and allows alternate name or number to be assigned. The “Enable” checkbox can be de-selected to disable the channel - the App will no longer display the channel when it is un-checked.

The default channel number displayed by the App may be replaced by making an entry in the “Name” field such as the entry “ESPN” shown in the example below. Although up to 10 characters may be entered in the Doghouse, the App will display *only the first five characters* of the channel name entry.

IMPORTANT: The “Save Settings” button must be clicked after any changes are made, otherwise the new settings will be lost at navigation away from this page or the next power cycle.

DOGHOUSE NAVIGATION

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CHANNEL SETUP - STEREO

Name	Enable
Channel 1 <input type="text" value="ESPN"/>	<input checked="" type="checkbox"/>

Maximum 10 characters for channel names entered here
Only first 5 characters are displayed in AudioFetch App

[Save Settings](#)

Optional: Enter desired channel name here

9.7 AUDIO SETTINGS page (gain, microphone, ACE feature, STEREO/MONO mode)

The **AUDIO SETTINGS** page is used to access three different sets of configurations:

AUDIO GAIN

ACE (Audio Control and Enhance)

MONO/STEREO OPERATING MODE

The **AUDIO GAIN** section displays current audio status for the channel selected from the drop-down list, and allows the gain to be adjusted.

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AUDIO GAIN - STEREO

Adjust settings for channel:

Channel 1 ▼

Audio Gain (dB)

10.0

[Save](#)

Default: 10.0

Valid Audio Gain range is -100.0 to 20.0 in 0.5 dB steps (m to mute)

Microphone Enable ☐

Enable when microphone connected to analog audio input

Mic Gain Boost ☐

Enable only if max Audio Gain setting above is not enough for microphone

Peak Audio Status 0 %

Adjust gain to see maximum value here hit approximately 70% - 95%

Source Analog

Selection Options

Channel 1
Channel 2

Channel 2 is available only when MONO mode is configured

Enter desired gain here to set maximum volume available in App playback

Adjust gain up if users need more volume

Adjust gain down if audio is distorted

To set the Audio Gain:

1. Channel 1 will be the only channel available in the drop-down list unless you have a mono-configured AudioFetch Express, in which case Channel 1 and Channel 2 will be available.
2. Ensure an audio source is connected to the AudioFetch Express.
3. Monitor the Peak Audio Status number, if an active audio source is connected then it will constantly change.
 - a. NOTE: There will be no status indicated if the selected channel is not enabled in Doghouse Channels Setup page
 - b. If the Audio Gain setting is very low (a large negative number) then this might be the problem – try changing the Audio Gain setting to a number like 15 (positive fifteen)
 - c. If it remains at 0% then check if enabled in the Channels Setup page, check the audio connections, else something is likely wrong in the cabling or audio source
4. Optimum Peak Audio Status is when the status hits 70% to 95% at its maximum
5. 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 set/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
6. Repeat this procedure for all audio channels

The example presented above shows an Audio Gain setting of 15.5 and resulting Peak Audio Status of 84.3% (this will change continuously).

MICROPHONE INPUT:

The AudioFetch Express Analog Input connector normally accepts a 3.5mm stereo plug with line-level stereo signal. By checking the “Microphone Enable” box in the **AUDIO GAIN** section, the Analog Input is reconfigured to accept a condenser style microphone and provide 4.7V (through 3.9K resistor) phantom power to the microphone.

The microphone used must be a type *compatible with standard PC sound card mic input*, with powering requirements compatible with the 4.7V phantom power (through 3.9K resistor) provided by the AudioFetch Express. AudioFetch recommends the **Pyle PLM31 Cardioid Condenser Headset microphone**, readily available through many online retailers. Some less expensive microphones available online do not work very well with issues such as low output, distortion, etc.

Note that most headset and sound card compatible microphones offer output on a mono-style 3.5mm plug – the AudioFetch Express is compatible with this – when the Microphone Enable box is checked the microphone’s mono signal is automatically directed into both the right and left audio channels.

To use a microphone with AudioFetch Express:

1. Connect a compatible microphone to AudioFetch Express Analog Input
2. Access the Doghouse and navigate to the AUDIO SETTINGS page
3. Check the Microphone Enable box, the new setting takes effect immediately
4. Initially, the “Mic Gain Boost” box should be un-checked
5. Position the microphone and speak into it as the microphone will be used normally, speaking a bit louder than will normally occur
6. While monitoring the Peak Audio Status indicator, adjust the Audio Gain up or down as needed to achieve maximum peak audio level between 60% to 80%
7. If the peak audio level is still too low with Audio Gain adjusted to its maximum setting of 20, then check the Mic Gain Boost box and re-adjust Audio Gain to achieve desired peak audio level

Most headset style microphones are designed to be located close to the speaker’s mouth in which case the microphone produces a strong output signal and the Mic Gain Boost box does not need to be checked. The Mic Gain Boost is intended for situations where the microphone might be located further away from the speaker such as a desktop/podium microphone (remember: the microphone must be compatible with standard PC sound card input). Please use the Mic Gain Boost feature carefully – follow the procedure above – enabling it with strong microphone signal could result in audio distortion.

ACE:

The **ACE** section (please scroll further down on the **AUDIO SETTINGS** page) provides optional adjustments which can improve audio quality where network/WiFi conditions may not be optimum for AudioFetch. Increasing the ACE setting will increase the amount of audio buffering used by the AudioFetch App – this can improve audio quality at the expense of slightly more latency (more delay between on-screen video and the audio heard by users). Usually the latency is not noticeable for ACE settings 1, 1.5, and 2. The latency may be just slightly noticeable for higher settings, but not so much in a fitness club or sports bar environment. Please review the displayed information and instructions, then contact AudioFetch Technical Support if further assistance is needed with the ACE settings.

ACE

Audio Control and Enhance - buffer feature (optional)

As a first option to solve poor quality audio, please consult the AudioFetch troubleshooting guide and/or AudioFetch Technical Support (888.330.4283 x3) to ensure network settings and source audio settings are optimized. However some WiFi networks may benefit from additional audio buffering at the expense of audio delay (latency).

To employ the ACE feature, first be sure that your mobile device is running latest version of AudioFetch App from iTunes or Google Play store. Then move setting (below) one place to the right corresponding to the type of mobile device being tested (Apple or Android) then click the Save button. On your mobile device completely close the AudioFetch App, re-open the App, and check the audio quality again counting any audio interruptions over a 1-2 minute test period. Progressively choose settings further to the right (remember to close then open the App after each setting change), until the overall experience is satisfactory. Hint: Typically Apple phones are more forgiving of WiFi issues so it may be wise to make changes to Android only initially. **Reminder:** encourage your users to update their AudioFetch App to latest version in order to experience the benefits of ACE!

Contact AudioFetch Technical Support if these adjustments either do not resolve audio issues or result in an unsatisfactory user experience.

Default settings are 1 for Apple (iOS) and 1 for Android. Choosing 1, 1.5, or 2 is optimal for most environments. Choosing settings 3 and 4 may be masking other issues.

ACE SETTING	1	1.5	2	3	4
Apple (iOS)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Android	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(must click Save to apply changes)

REMINDER: After saving a change, the AudioFetch App on your mobile device must be closed then re-started.

The **STEREO/MONO OPERATING MODE** section allows the AudioFetch Express to be configured for either STEREO or MONO operation. MONO operation provides an additional channel at the expense of having only mono signals delivered to the AudioFetch App.

STEREO operation:

A single channel will appear in the Channels Setup page

One stereo channel will be available in the AudioFetch App

Any of the audio input connectors may be used (Optical, Digital Coax, Analog)

MONO operation:

Two channels will appear in the Channels Setup page

Two mono channels will be available in the AudioFetch App

The Analog input connector must be used – ***do not use Optical or Digital Coax inputs!***

STEREO/MONO OPERATING MODE

STEREO mode (default) provides one stereo channel and any one of the audio input connectors can be used.

MONO mode provides two mono channels ***and only the 3.5mm analog input connector should be used.*** Do not use the digital coax or optical connectors when mono mode is selected. In mono mode: Channel 1 will source from what is usually the left audio channel on the analog input connector, Channel 2 will source from what is usually the right audio channel on the analog input connector.

When the operating mode is changed (and save button clicked), the new setting will be saved and then there will be an automatic reboot of this unit.

Select operating mode:

Stereo ▼
Save

Selection Options

Stereo (default)
Mono

Changes not saved until
the Save button is clicked

To change the operating mode:

1. Click the dropdown list and select Stereo or Mono choice
2. Click the Save button
3. Click the OK button in the confirmation dialog box

When the mode is changed and Save/OK buttons clicked, the new mode will be saved and the AudioFetch Express will automatically reboot, which will take about 45 seconds. During this time do not remove power from the AudioFetch Express.

When configured for MONO operation, the Analog input connector must be used, do not use Optical or Digital Coax inputs. The Analog input connector is a standard 3.5mm stereo jack, in mono mode the signal coming in on what is usually the Left connection (in stereo operation) will be directed to Channel 1 in the App, the signal coming in on what is usually the Right connection will be directed to Channel 2 in the App. Choose the appropriate cables and adapters to route the separate source audio signals into the L/R signals of the Analog input connector. Contact AudioFetch Support if further help is required for making the signal connections.

9.8 SYSTEM STATUS page

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.

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SYSTEM STATUS - MONO

Serial Number: 15870208
Main Firmware Revision: 2018-04-15
Installed Channels: 2
Enabled Channels: 2
Connected Users: 0
Max. Connected Users past 24 hours: 0
Connected Users past 7 days: 1
Max. Connected Users past 30 days: 1
Max. Connected Users ever: 4

[Reset Statistics](#)

Connected Users per channel

Ch 1: 0 Ch 2: 0

[Click table for user details](#)

[Refresh](#)

[Link to AudioFetch reporting portal online](#)

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:

CONNECTED USER LIST

Sort-IP ▾

No. 1	IP = 192.168.174.150	Ch. = 1	Time =	00:02:04
No. 2	IP = 192.168.174.149	Ch. = 1	Time =	00:04:57

[Refresh](#)

[Return to System Status Menu](#)

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

9.9 TOOLS AND UTILITIES page

The **TOOLS AND UTILITIES** page provides means to change the Doghouse username/password, an alternate QoS adjustment which can improve audio quality on some networks, settings related to how automatic firmware updates are delivered, and other utility functions.

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.

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All entries 7 char max.

Name Password New Name New Password Force alternate WMM VOICE QoS ☒

(For AudioFetch Express - usually leave this enabled)

Installed Firmware: 2018-04-15

Enable Online Automatic Firmware Updates ☒

Local Update - disable Automatic Updates checkbox and browse for update file

 No file selected.**Restrict Doghouse Access** (timed window after power-on)

Use this to set a time window for initial log-in to Doghouse after power-on. If window time expires with no log-in then Doghouse is disabled until next power cycle. Once successfully logged-in, Doghouse access remains enabled until next power cycle. Clicking the Disable button will disable access until next power cycle.

Initial Doghouse log-in window (minutes): Click here to disable Doghouse now: **Blink LEDs** **RED** **GREEN** **YELLOW**(To ID this box) ☐ ☐ ☐

This does not restore WiFi networking mode settings (Use the external button)

The “Force alternate WMM VOICE QoS” checkbox should be tried when experiencing audio quality issues – especially on busy networks. Normally with AudioFetch Express this box should remain checked, however if experiencing audio quality issues then try unchecking to determine if it can provide improvement.

There is a checkbox to enable/disable Online Automatic Firmware Updates, which are provided from time to time by AudioFetch (the AudioFetch Express must be connected to a network with Internet

access). Default setting is enabled, AudioFetch recommends this be left enabled. AudioFetch system firmware updates are rare and generally occur late at night. The AudioFetch Express checks for an available update once just after power-on and then once every 5 hours thereafter.

If desired, the “Check now for online update” button may be clicked. A confirmation will pop up, click the “OK” button to proceed. There is no subsequent display about an update being available or starting, but if an update is available then it will begin automatically and the download progress is indicated by the yellow status LED on the AudioFetch box flashing (during download). After the download completes, AudioFetch Express will reset itself, execute the update (yellow LED will turn on again during update), then reboot several times. Completing all of this typically takes about 20-60 seconds.

New firmware may be manually uploaded to AudioFetch Express if needed (see buttons under “Local Update”) but this would be rare and should be accomplished while receiving guidance from AudioFetch tech support on a case-by-case basis.

“Restrict Doghouse Access” is a security feature to help prevent unauthorized access into the Doghouse by end users of the AudioFetch system. By default, the Doghouse may be accessed at any time so long as the correct username/password credentials are entered. By selecting a specific log-in window of time from the dropdown box, the Doghouse will only be accessible if the initial log-in occurs within the selected number of minutes after power-on. The choices are: 1 minute, 2 minutes, 5 minutes, 10 minutes, and “Forever”. If an initial log-in does not occur within the selected time window, then the Doghouse becomes and remains completely inaccessible until the next power cycle occurs. For example, if a 1 minute time window is selected, you must log-in to the Doghouse within 1 minute of power-on (it’s actually 1 minute from the time the green status LED turns on solid). Once successfully logged-in, the Doghouse will remain accessible indefinitely, until either: the next power cycle, or the “Disable” button is clicked. If access to the Doghouse is needed again, just power cycle the box and log-in again within the 1 minute window.

The “Blink LEDs” section provides checkboxes for each of the three status LEDs on the AudioFetch Express. When any of these checkboxes are enabled, the normal status display is temporarily replaced by the enabled LEDs blinking. This is simply a way to force the status LEDs on a particular box to blink – which can be useful for identifying specific boxes in a multi-box installation. Be sure to uncheck all of these to return the LEDs to normal display of status.

Clicking the “Restore Factory Settings” button clears most AudioFetch Doghouse settings, restoring to factory default values, **but does not restore the networking mode settings on the NETWORK SETTINGS page**. AudioFetch will automatically reboot after clicking this button. After performing a factory restore, Doghouse settings should be reviewed and adjusted as necessary (don’t forget that the username/password will be reset back to default ADMIN/admin as well).

NOTE: AudioFetch recommends using the external button to restore factory defaults, as this provides means to restore all settings to default values, including the networking mode settings. Use of the external button is described in section 10 [Restoring Factory Defaults with External Button](#).

9.10 CONTACTS & LINKS page

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



10 Restoring Factory Defaults with External Button

(this info applies to firmware 4018-04-16 and later)

There are two choices: A) restore only WiFi-related settings or B) restore all settings.

IMPORTANT: Do not remove power during the restore procedure.

A) Restore only the WiFi Module settings in the Network Setup Doghouse page:

1. Power up the AudioFetch Express and allow it to fully boot (about 35 seconds)
2. Press and hold the User Button, as soon as it is pressed all status LEDs will turn off
3. Continue pressing the button continuously for 10 seconds

4. At 10 seconds all three status LEDs will turn on solid for a window of 3 seconds
 - Release the button while the status LEDs are on to restore defaults for only the WiFi module (just the WiFi module settings on the Network Setup doghouse page)
 - Red and green LEDs will turn off, yellow LED will flash indicating WiFi module restore is in progress
 - AudioFetch Express will automatically reboot when restore is complete

B) Restore all settings on all Doghouse pages:

1. Power up the AudioFetch Express and allow it to fully boot (about 35 seconds)
2. Press and hold the User Button, as soon as it is pressed all status LEDs will turn off
3. Continue pressing the button
4. At 10 seconds all three status LEDs will turn on solid for a window of 3 seconds
 - **Do not release the button yet**, continue pressing button and the status LEDs turn off again
5. After the status LEDs turn off, continue pressing button for another 7 seconds
6. When all three status LEDs turn on again:
 - Release the button while the status LEDs are on to restore factory defaults for all Doghouse settings
 - Red LED will turn off, green and yellow LEDs will flash indicating full restore is in progress
 - AudioFetch Express will automatically reboot when restore is complete
7. Note: in step 6 above the three status LEDs will remain on for 5 seconds, then turn off. If the button is not released before they turn off, then nothing will happen (no restore). In this case, simply release the button then repeat this procedure starting from step 1.

There is a “Restore Factory Defaults” link/button in the Doghouse Tools & Utilities page, this will restore all the Doghouse settings except for the WiFi module settings.

When the WiFi module is restored to default, AudioFetch Express will operate in Access Point mode:

SSID: AudioFetchExpress
no encryption or password

11 Changing SSID/password in Wireless Client Mode

In Wireless Client Mode the AudioFetch Express connects into your existing WiFi network and must be configured with the correct SSID and password. If your WiFi network settings are changed (SSID/password), or if AudioFetch Express was not shipped with pre-configured settings matching your WiFi, then follow this procedure:

1. Restore the WiFi module to default settings – follow procedure A) in section 10 [Restoring Factory Defaults with External Button](#)
2. The AudioFetch Express will restart in Access Point mode with SSID: AudioFetchExpress and no encryption/password
3. Connect a mobile phone, tablet, or PC to the AudioFetchExpress WiFi and access the Doghouse using default username/password: ADMIN/admin
4. Select **Wireless Client** from the Operating Mode dropdown list
5. Enter your network SSID, Encryption, and Password information in the Client Mode Settings section

NETWORK SETUP - FetchExpress

Changes are not saved until the SAVE button at bottom of page is clicked

Undo all changes
Restore

WiFi Module Information

Firmware Version	2017-02-10x
WiFi MAC Address	28:A1:EB:FD:05:B4
Ethernet Port MAC Address	28:A1:EB:FD:05:B3

Operating Mode

What WiFi do users connect to

FetchExpress gets Internet from

Wireless Client

Existing WiFi

N/A (operating as bridged client)

Access Point Settings

Not used for selected Operating Mode

SSID (1-32 characters)

Encryption

Password (8-63 characters or 64 hex digits)

WiFi Channel setting

WiFi Channel currently being used

AudioFetchExpress

none

auto

6

Client Mode Settings

Must match your existing WiFi network exactly

SSID (must be exact!)

Encryption

Password

YourWiFiSSID

WPA2-PSK

YourWiFiPassword

Select Wireless Client

Enter your network's WiFi SSID here

Selection Options

none (default)

WPA-PSK

WPA2-PSK (this is most common)

WPA-PSK/WPA2-PSK Mixed Mode

Select what matches your network settings

Enter your network's WiFi password here

Enter your network's WiFi SSID here

Selection Options

none (default)

WPA-PSK

WPA2-PSK (this is most common)

WPA-PSK/WPA2-PSK Mixed Mode

Select what matches your network settings

Enter your network's WiFi password here

6. Click Save Settings button at the bottom of the page
7. Click the “OK” button in the warning dialog
 - a. 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. The save will take some time, be patient and **do not disconnect power**
 - c. Then the AudioFetch Express will automatically restart and should begin operating in the new mode
8. After the restart, the new networking mode should be active and if correctly configured the status LEDs should indicate the ready condition

9. If any problems after the restart (AudioFetch Express not connecting to your WiFi network) then:
 - a. Try a power cycle
 - b. Try repeating this procedure one more time – carefully checking that the SSID and password used exactly match your existing WiFi network SSID and password

12 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 Wireless Client or Wired Only modes are 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.

When in Wireless Client or Wired Only modes, AudioFetch Express typically works out of the box on simple networks such as when connected into a single small business wireless router using the main (not guest) WiFi. More complex networks may require configuration adjustments (firewall, etc.). Information in this section is provided to assist IT/Network personnel when such adjustments are necessary.

Network traffic used by the AudioFetch System, unless otherwise noted packets are unicast between IP address of the Mobile Device (running AudioFetch App) and IP address of AudioFetch Box:

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

<u>Protocol</u>	<u>source port</u>	<u>dest port</u>	
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):

<u>Protocol</u>	<u>source port</u>	<u>dest port</u>	
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.

13 Regulatory Compliance Statements

Contains Transmitter Module FCC ID:2ACOE-SKW72

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.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications are not permitted and will void the product warranty.

This product meets the applicable Industry Canada technical specifications.

