FITNESS AUDIO

Operation manual

AEROMIX 3+5LS
Stereo Voice-over-Music Mixer

International Organizaiton for Standardization

ISO

9001:2015

RoHS
GREEN PRODUCT
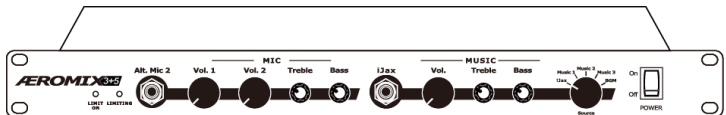
# Aeromix® AMX-3+5LS
by Fitness Audio®
Set-up Guide

Thank you for purchasing the Aeromix AMX-3+5LS voice-over-music mixer by Fitness Audio. We designed it to be easy to operate but with more installation options when setting up or updating the studio's sound system. We do recommend that your audio contractor installs this mixer for you. If you are doing it yourself then read this manual first and follow our Hookup Guide for the best result.

Key To Illustration:
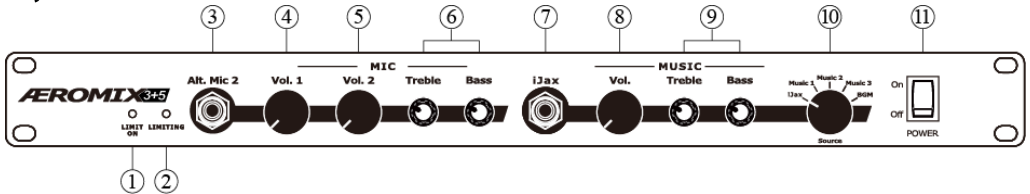
1. Limit On LED
2. Limit Indicator
3. Alternate Mic 2 Input
4. Mic 1 Input Volume
5. Mic 2 Input Volume
6. Mic Bass & Treble
7. iJax Cable Input
8. Music Input Volume
9. Music Bass & Treble
10. Input Source Switch
11. Power On/Off
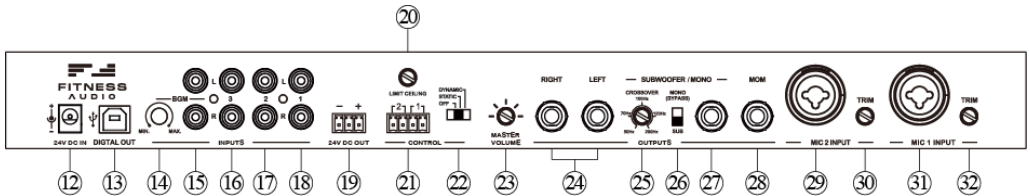
12. 24V DC Input
13. Digital Output
14. BGM Volume
15. BGM RCA Inputs
16. Music 3 RCA Inputs
17. Music 2 RCA Inputs
18. Music 1 RCA Inputs
19. 24V DC Output
20. Limit Ceiling
21. Music Mute/LM Relay Inputs
22. Off/Static/Dynamic Switch
23. Master Level Control
24. Right & Left Outputs
25. Subwoofer Crossover
26. Subwoofer/Mono Switch
27. Mono Output
28. Music Only Monitor (MOM) Output
29. Mic 2 Input
30. Mic 2 Trim pot
31. Mic 1 Input
32. Mic 1 Trim pot

Connection Set-Up

1. Connecting a Wireless Mic Receiver.

Connect the line out jack socket of your wireless microphone receiver to the Combi Mic 1 Input (31) socket on the back of the Aeromix 3+5LS. Use a standard mono 6.35mm (quarter inch) jack to jack lead. This is normally supplied with wireless mic receivers, including our Fitness Audio Brand. The Balanced Mic Combi Sockets(31& 29) will also accept XLR-M to XLR-F cables preferred by many installers. Balanced line connections can sound better than unbalanced ones. They reveal more "body" in the voice and are less susceptible to noise and interference.

1.1 Connecting a second Wireless Mic Receiver

To connect a second wireless receiver permanently, use the Mic Input 2 socket (29).

1.2 Connecting a "Guest" Wireless Mic Receiver

There is a third mic input on the front panel of the mixer(3). This is for a visiting Instructor using their own mic system as a "walk up and plug in" solution. Just plug in a jack to jack cable from their wireless mic system and power it up! They can control the Mic Volume from the Vol. 2 Control(5). If required, you can use both front and rear sockets to Mic 2 together. Balance the 2 levels by adjusting the Guest receiver's volume control up or down on the unit itself.

1.3 Using the Mic Inputs' Trim Pots

Too much mic volume from the mixer or is the mixer's mic volume control too sensitive? Use a small slot head screwdriver on the 2 Rear Trim Controls (30 & 32) provided to dampen the mic channel volume down. Need a touch more volume for either of the mic channels to be louder? Use the trim pots to turn the mic channel up. If you are using the XLR jacks on your mic receiver most likely it will cut the volume control on the front of your Mic Receiver. The rear Trim controls allow you to balance out the volume between your mic receivers. This way, the Mic volume controls on the mixer will respond similarly.

2. Connecting the Music Sources

Still using a CD player? Connect the "line out" or "play" sockets of your CD Player to the Music 1 input sockets(18) on the Aeromix 3+5LS using a 2 RCA to 2 RCA lead.

2.1 Connecting a Bluetooth Receiver

If using a Fitness Audio AeroLink Bluetooth® receiver then connect it to any Music Input (16, 17 or 18), as available. Same for any Hard Drive Music system with a line level output.

2.2 Connecting a Personal Portable MP3 Player or Smartphone

Connect a portable MP3 player via the headphone/line out/adapter socket to the Music 2 or 3 Inputs (17 & 16) of the Aeromix using a 3.5mm minijack to 2 RCA cable - Or - Use the 6.35mm stereo jack to 3.5mm stereo mini-jack (iJax cable provided) into the iJax(7) jack socket on the front panel of the Aeromix. Extra or longer (2m) iJax cables are available from your Fitness Audio dealer if required.

2.3 Connecting to the BGM Inputs.

Many clubs have a universal BackGround Music program to be played when classes are not running. Some studios offer Virtual Classes on Demand with the audio/video signal from specialised program suppliers. Use the BGM Input(15) for either of these applications. There is an overriding Volume Control(14) next to the sockets. It allows you to set the max sound level with no way on the mixer front panel to change it when it's selected.

3. Connecting to the Power Amplifier

Connect a dual 6.35mm jack lead (balanced or unbalanced) from the Left & Right(24) pair of output sockets to your amplifier's input sockets. A pair of short TRS Jack to XLR-M cables are supplied in some areas for this purpose. All the outputs are electronically balanced. You can extend these up to 20 metres to use with Powered Speakers.

4. Connecting the other 2 Outputs

Use the switchable Subwoofer/Mono Output(27) to connect to a powered sub-woofer. Use the Mono (Bypass) switch to introduce the variable crossover trim pot. Up for Mono and Down for the Crossover. Adjust the frequency setting that sounds right for the sub and the room.

4.1 Mono Output

In the Mono position use it for driving another mixer/amplifier. You could also connect the mixer to a wireless transmitter or a recording system.

4.2 The MOM Output

Use the Music Only Monitor)(28) Jack socket to connect to an on-stage foldback speaker for instructors to hear the music beat cues without the mic. We recommend using a powered wedge speaker positioned at the back and centre, firing up from the floor of the stage. Alternatively, you could install a smaller powered speaker on the ceiling. Hang it about a metre in front of centre stage, pointing down at the instructors head. It's all about letting them hear the beat as loud as they want it on stage without the mic giving them any feedback problems.

Power Up & Make adjustments

5. Power On

Connect your speakers to the power amplifier. Connect the 24VDC power pack to the Aeromix and the power point. Turn the Power Switch (11) on and check that the full system lights up.

6. Setting the Volume Levels.

Start from the mic end! First up adjust the level controls of your power amplifier. Set its volume controls to the maximum. Then, using a small screwdriver, set the Aeromix Master Level Control(23) on the rear panel to between the halfway click point and the end stop. Turn the Mic 1 Trim (32) screwpot to the half way point. If using 2 mics then do the same with Mic 2 Trim(30)

6.1 Setting the microphone level.

Check that the receiver's mic/line output selector (if there is one) is set to MIC. Turn the mic receiver volume control to maximum to give the mixer full signal. Next turn the Voice 1 (4) control on the Aeromix up to the 2 o'clock position. Put the microphone on a helper's head and turn on the transmitter. They count out loud while you turn the Mic 1 Trim(32) control with the screwdriver until feedback (mic howling) starts. Edge it back a touch until the voice sounds dry with no hint of "ringing" or feedback. Fine tune by walking around the room talking. See how close you can get to the speakers without the mic feeding back. The better built they are the closer you'll get. We call this process setting the "maximum gain-before-feedback" position.

6.2 It's a Voice-Over-Music Mixer!!

Now play some music and adjust the music volume against your mic level. Project your voice as you would do, if you were teaching a group fitness or dance class. Remember, it's a voice over music sound system! The participants want to hear the instructor's voice above the level of the music. The Mic level should be loud enough to be clear when the Music Control (8) is on maximum and the Master Level Control set to an acceptable high loudness level for both mic and music before Limiting.

6.3 Setting the Tone Controls(6&9).

Mics - Sometimes you need a small amount of eq adjustment for voices to "cut through". Male voices may need a little less bass and a touch more treble to sound clearer. Start at the 12 o'clock position for the Treble and Bass Controls(6). Female voices may well sound fine at the 12 o'clock positions of both controls. If any EQ is needed then it should be small amounts of boost or cut. Only poorly designed speakers will need greater eq adjustments. Powered speakers often have their own tone or DSP preset selections, so set these to the center or neutral settings before adjusting the mixer's tone controls. Music - Select the right input on the SOURCE selector(10). Start playing a test music track. Set the Music Volume (8) at a comfortable class level. Start at 12 o'clock as your center point and adjust the

Treble and Bass Controls (9) by sweeping each one from left to right and back again. Decide on a setting that gives a more subtle fullness to the music rather than an exaggerated bass and/or treble.

7. Limiting or Loudness Control

The Aeromix 3+5Ls offers you 2 ways of automatically dealing with an excessive sound level in the room. It offers peak limiting, set manually. That is, restraining the peaks of sound above an adjustable "ceiling". Use the Switch (22) and select Static. Alternatively, if you have purchased and connected a Trigger LM-30 Loudness Monitor (see 8 below), then you can select the next position Dynamic to lock it in once set.

7.1 "Static" Peak Limiting

Peak Limiting can be set manually using a Decibel or SPL Meter or a Sound Level Measuring App like Decibel X on a Smartphone. The Decibel X App will show you the average sound pressure level (SPL) as well as the peaks. Choose the volume level that is right for the size of the room by standing in the centre and getting an instructor to start teaching a class with music. Do this with the Limiter Switch (22) in the OFF position. If the voice or music starts hitting peaks higher than your target SPL then, move the switch to the centre position to engage the Limiter. Use a small flat blade screwdriver to adjust the limiting ceiling by using your eyes and ears. Working on the back panel, start with the screwpot in the centre click position, listen and look at the red LED. As you turn the screwdriver anti-clockwise you are lowering the ceiling for more signal to be limited. Check the red LED is flashing with the peaks. If it's solid red then that's too much, back it off until it's flashing with the beats in the music and as the instructor lifts their voice. Use the switch (22) to compare Off to On and note the difference. Work & Safety rules, where they exist, recommend an average noise exposure of 94 dBA for a 60 minute class.

8. Connecting to a Loudness Monitor

You can also link it to our Fitness Audio LM-30 Loudness Monitor, aka The Trigger. Connecting details below. Once hooked up and pre-set to say 94dB, C-weighting preferred, it will "push" back any peaks on any frequency to that setting.
Follow the same steps as for Static then, with the Trigger connected, switch over to Dynamic. Use the screw pot(20) to set the Limit Threshold. The sound input "ceiling" above which limiting occurs. The LED light(2) flashes when it's working for you.
The Fitness Audio LM-30 Trigger™ is an optional extra companion product to the Aeromix 3+5LS. It is a sound pressure level (SPL) monitoring display. It shows you when a pre-set sound level has been exceeded by illuminating 3 rows of red LEDs. Mount the LM-30 monitor above head height on a side wall. Set it around 1/3 of the way back from the front of the room. Choose a position where ambient or reflected sound will register. Do not position it directly facing the loudspeakers. It must be visible to the sound system operator.

8.1 Installing the Trigger

Using Cat 5/6 cable, connect the stripped back wires of one pair to the 4 pin green connector on side 1 for the Trigger™. The earth side to the inside contact of {1} and the signal side to the outside contact of {1}. Run the cable from the Trigger back to the Control Euroblock Pair#1. Using the detachable half of the green connector, connect the 3rd contact to the earth or sleeve of the mini jack and 4th to the tip or +. The Trigger is supplied with a 24V power pack but if you don't have a powerpoint near the mounting position then there is a 24V DC feed available using the 3 pin Euroblock (19). Use a second pair of the CAT 5/6 cables for this purpose.

8.2 Testing the system

The default setting of the Aeromix 3+5's Limiting Switch (22) is OFF for a normal hook up to a power amp. When connecting the mixer to the Trigger™ go through the set up process above then set the switch to Dynamic. Now get a miked up instructor to start teaching a class with music with the SPL monitor set at 94dB. Keep your eyes on the monitor lights while setting the sound levels. One red LED lighting up is the target you should go for. Two rows of red LEDs is living dangerously and three will trigger the Peak Limiter circuits to "push" the sound back down. It's not meant to sound smooth when that happens, so if it's sounding jerky then turn down the mic and music controls until it's smoother again and under 94dB.

9. Digital Streaming Output

This mixer has a USB Type B Output socket on the rear panel (13). There is a quality stereo Analog to Digital Convertor Board inside. It takes your Voice over Music mix and converts it into a Digital format and sends it out via the socket to the computer. Use a suitable USB-B cable (not supplied) to whatever your computer takes to feed the sound into Zoom or other streaming programs. Check System Preferences and the "Audio" selection of the streaming program to make sure you have selected "FA USB OUT" input, not the built-in computer mic input. Review the mix on headphones by recording 30 seconds of voice and music before starting the class.

This is best used with a sound system where you can reduce the sound you hear, after the mixer's volume controls. That is, if it's too loud in the studio, you can turn down the loudness of the speakers using the volume controls on the power amp or on powered speakers to preserve the mix going out to the computer.

10. Music Mute Relay Circuit

Many responsible building approval authorities need a cut-out switch installed on any powerful music system in the event of a fire. Whether it's a private one or a community centre (ie city or council owned fitness centres). The circuit is closed by the fire alarm control system if an alarm is activated anywhere in the building. This is "best practice". We hope this will become a compliance standard for all sound system installations everywhere around the world.

We have opted to use a music cut-out circuit rather than a total power cut system. All mic users should be trained to respond to a fire alarm and lead their people to safety using the power of their amplified voice. This connection should only be installed by a licensed contractor.

To use the circuit, run a two-wire cable from the general services board (the building's alarm system) to the mixer. Get some music playing and have someone on the mic just talking. Check that it's working by connecting one end of a short length of test cable to the green Euroblock 4 pin Connector (21). Use the right side of the Euroblock (Pair 2). The earth side goes to the inside contact and the active side to the outside of Pair 2. Touch the remaining two wires together and the music will cut out leaving the mic working. Once tested and confirmed, connect the alarm board cable to the Euroblock connector. It will then work when the fully armed system is tested, prior to and for approval.

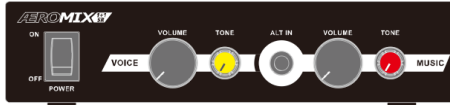# FITNESS AUDIO PRODUCTS
INCLUDE:

Fitness Audio U-Series UHF Wireless System
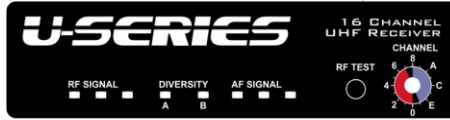
Fitness Audio Aerolink AL3.0 Bluetooth Receiver

Fitness Audio Aeromix1+1SR Voice-over-Music Mixer

Fitness Audio Aeromix2+2SR Voice-over-Music Mixer

Fitness Audio LM-30 Loudness Monitor

Fitness Audio SPL2 Sound Pressure Limiter

6

Fitness Audio products are distributed worldwide by Fitness Audio Network. They are manufactured to our specifications in Taiwan. Your Aeromix is covered against manufacturing defects by a 12 month warranty commencing from your date of purchase.

Warranty Information

(Please retain for your records)

This product was purchased by:

(Your Business)..

on (date).../... /... from (Company)..

of (address) ....

Model Number(s) ....

Serial Number(s) ....

FCC & IC Caution:
This device complies with Part 15 of the FCC Rules. Operation is subject to the following 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.
CAN ICES-003(B) / NMB-003(B)

⚠️ **WARNING**: This product can expose you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Fitness Audio

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