



User Manual for Flight Sounds Products:

- FUSION-GA / 1A~1B
- FUSION-HM / 1A~1B



2022-12-11

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2. Important Information

Thank you for purchasing the *Flight Sounds FUSION* product (“Product”). Please take a moment to read through this Important Information chapter before proceeding. Users should also refer to the Support and Disclaimer Information chapter for detailed writings regarding warranty & support information and other terms and conditions.

Cautions and basic care instructions

- Please be aware that the Product features an internal audio amplifier. This allows the computer audio strength to be boosted to the levels required for driving ‘high-impedance’ Aviation Headsets. **Users should therefore not connect ‘low-impedance’ (ie: non-Aviation) headsets to the device** as damage could occur.
- Ensure that the computer volume is turned down before connecting the Aviation Headset.
- Users should bring the device’s volume up FUSION gradually until a comfortable audio volume has been achieved. High audio volumes for prolonged periods can result in hearing loss.
- Do not attempt to disassemble or alter any part of this device.
- Stop operating the device immediately if it emits smoke or noxious fumes.
- Do not allow the device to come into contact with, or become immersed in water or other liquids.
- Do not store the device in humid or dusty environments.
- Avoid using, placing or storing the device in places subject to strong sunlight or high temperatures, such as the dashboard or trunk of a car.
- Be careful not to subject the device to strong impacts.
- Avoid placing the device in environments where it may be subjected to strong electric and/or magnetic fields.
- Clean the device with a soft, absorbent cloth. Do not use cleaning substances containing alcohol, benzene, thinners or other flammable substances.
- Only use within the specified Operating Temperature of -15°C to 70°C.
- NB: It is advised to plug in *Flight Sounds FUSION* **before** launching any software programs you intend to use it with.

3. Product Overview

3.1. Description

Flight simulation will never be '*as real as it gets*' unless it sounds and feel authentic. The *Flight Sounds FUSION* product helps to achieve this goal by bringing flight simulation audio into the 21st century. Pilots, gamers or any aviation enthusiast can now use their aviation headsets with any computer via USB.

Flight Sounds FUSION is designed to be integrated seamlessly into flight simulator cockpits. The product is as easy to use as possible – no additional software, no batteries and no external power sources. Simply connect the USB cable to your computer and wire the audio connectors and various controls to your location of choice in the cockpit!

3.2. Requirements

Users will need to supply the following items to use the Product:

- An Aviation Headset with either:
 - PJ-068 & PJ-055B connectors – General Aviation (-GA) version
 - U-174/U connector – Helicopter/Military (-HM) version
- A computer with an available USB port, running either:
 - Mac or Windows operating system.
- Potentiometers Knobs are not supplied:
 - Users can purchase Knobs from Flight Sounds or choose to purchase their own in a style that is more suitable for their cockpit design.

3.3. Product Items Supplied

- x1 *Flight Sounds FUSION*
- x1 USB Cable
- x7 LINK Cable
- x4 LINK Splitter Cable
- x1 USB Volume control PCB
- x1 Power Switch PCB
- x2 Channel Volume control PCBs
- x2 Squelch control PCBs
- x2 Headphone connector PCBs [-GA Model]
- x2 Microphone connector PCBs [-GA Model]
- x2 U-174/U connector PCBs [-HM model]

NB: No additional driver software is supplied with the product. The device has been designed for 'plug & play' operation with Windows or Mac Operating Systems.

3.4. Key Features and Specifications

Features

- Ability to mount the audio connectors, power switch and volume controls (supplied) to your location of choice in your cockpit for seamless integration.
- No soldering required if using the cables supplied.
- Volume and Squelch controls (supplied) on two separate channels
- Separate external audio volume control (for radio volume simulation)
- Electrical Power Switch with LED indicator
- Zero delay voice feedback (intercom) feature
- Aesthetic, robust, anodised aluminium enclosure
- Ability to connect to Device (eg: Smart Phone) for playback and recording
- Ability to connect to an external speaker
- Ability to connect to a DUAL or other DUALPROs/FUSIONS (via intercom link) to expand the intercom channels
- Ability to connect to non-aviation headsets* (*Beta)
- Selectable Mono/Stereo setting
- Support for Push to Talk
 - via Flight Sounds PTT Auxiliary Module (Sold separately), and/or
 - via 3rd party game controllers

NB: In both instances PTT support requires the Flight Sounds PTT Mapper Software (Sold separately)

- PTT settings for sidetone, intercom link, and computer audio

Technical Specifications:

- USB 1.1, 2.0 and 3.0 compatible
- Plug and Play with Windows; macOS; Linux
- Uses standard General Aviation headset connectors (PJ-068 and PJ-055B)
- Supports headset impedances of 100 to 600 Ohms
- Supports Mono and Stereo Headsets
- Powers microphone bias (+12V) from USB port (no external power needed)
- Output frequency response (20Hz-20KHz)
- Product Weight: 758g (including all peripherals)
- Total Packaged Weight: 975g (including all peripherals)
- Size: 106mm(L), 166mm(W), 55mm(H)
- Total Packaged Size: 192mm(L), 147mm(W), 89mm(H)

3.5. Product Version

- This User Manual applies only to *Flight Sounds - FUSION* model numbers “1A~1B” as indicated on the Model number sticker on the Product (if included on the product)

4. Set-up Guide

4.1. Operating Set-Up — Windows 11

This section reviews how to set up the *Flight Sounds FUSION* product for use with a computer equipped with the Microsoft Windows 11 operating system.



Important: While the *Flight Sounds FUSION* may be compatible with older versions of Windows – the setup steps and figures shown may differ.

4.1.1. Basic Setup

- Follow these steps to set up the *Flight Sounds FUSION* for use with Windows OS.

Step 1:

Connect one end of the USB cable (supplied) to the *Flight Sounds FUSION* and the other end to an available USB port (or hub) on the computer. After the *Flight Sounds FUSION* is connected to the computer, the standard Windows OS driver installs automatically to the computer. A custom driver for the *Flight Sounds FUSION* is not required.

Step 2:

- Open the Control Panel (**Windows Key**→ *Search “Control Panel”*).
- From the Control Panel open **Hardware and Sound Group** → **Manage Audio Devices**.



Note: To shortcut this process for future:

- Go to control panel and open 'Small Icons' in the category list.
- Right click on 'Sound' icon and select 'Create a shortcut'

Step 3:

Select the Playback tab and confirm the Flight Sounds - FUSION as the default playback device, as shown in *Figure 4.1 Sound - Playback Tab*.

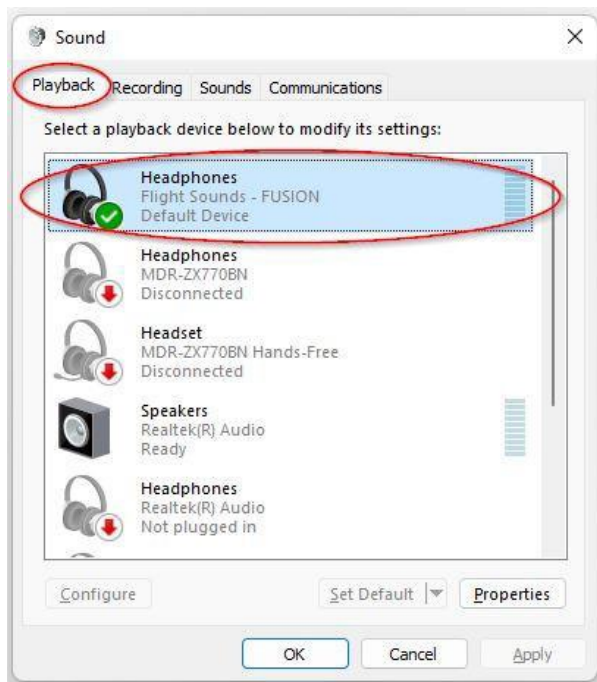


Figure 4.1 Sound - Playback Tab

Step 4:

Select the Recording tab and confirm the Flight Sounds - FUSION as the default recording device, as shown in *Figure 4.2 Sound - Recording Tab*.

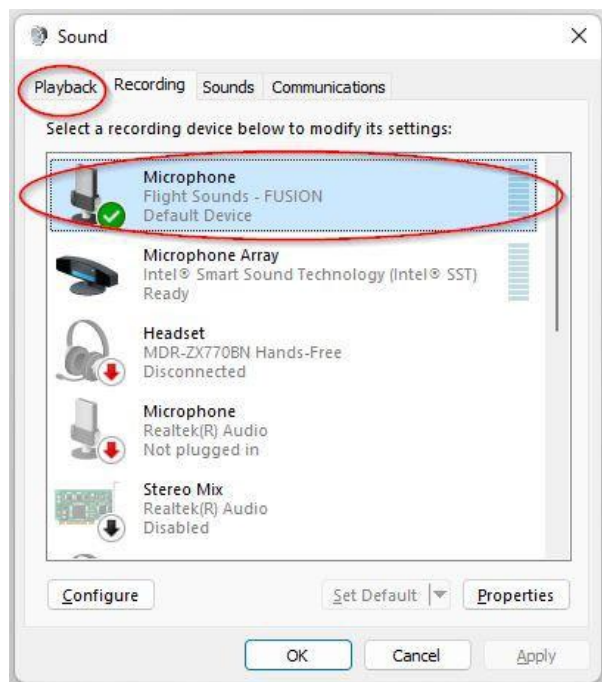


Figure 4.2 Sound - Recording Tab

4.1.2. Volume and Mute Settings

Follow these steps to configure the computer volume settings for headphones, microphone, and the recording options.

To set the headphone volume:

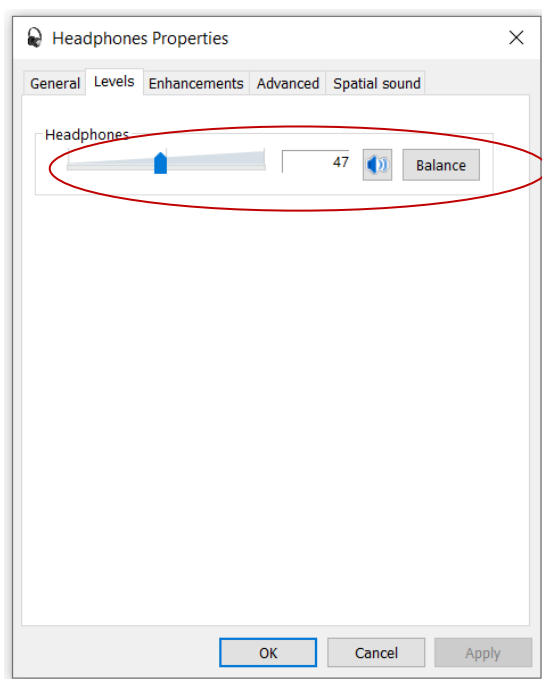
Step 1: Open the Sound options from the Control Panel (Start → Control Panel → Hardware and Sound → Sound)¹.

Step 2: (i) Select the Playback tab and (ii) open the Headphone properties of the “Flight Sounds - FUSION” and (iii) select Levels tab, as shown in *Figure 4.3 Headphones Properties - Levels Tab*.

Step 3: Set the output volume, mute, and the balance for headphones from 0 to 100.



It is advised that (For *Flight Sounds FUSION*) to set the Computer Volume to 100 (or close to)



Set the headphone output volume, mute and balance

Figure 4.3 Headphones Properties - Levels Tab

To set the microphone sidetone:



There is no need to set the sidetone on the computer settings, as the Device provides Sidetone in hardware.

¹ Refer to section 4.1.1 to shortcut this process for future

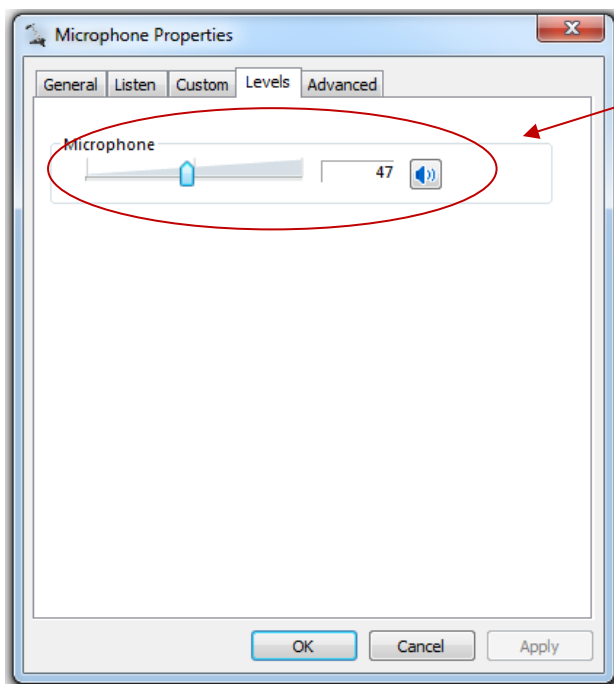
To set the record volume:

Step 1: Open the Sound options from the Control Panel (Start → Control Panel → Hardware and Sound → Sound)².

Step 2: Open the microphone properties of the “Flight Sounds - FUSION” from the Sound options and select Levels tab, as shown in *Figure 4.4 Microphone Properties - Levels Tab*.

Step 3: Set the microphone volume and the recording mute level from 0 to 100.

After this process is complete, the system volume setting for each component is maintained even if *Flight Sounds FUSION* is plugged in/out.



Set the microphone volume and mute for recording

Figure 4.4 Microphone Properties - Levels Tab

² Refer to section 4.1.1 to shortcut this process for future

Excessive or insufficient microphone volume (AGC)

If you are having problems with your microphone being excessively loud or quiet when recording audio on a computer, please follow these steps:

Step 1: Open the Sound options from the Control Panel (Start → Control Panel → Hardware and Sound → Sound)³.

Step 2: (i) Select the Recording tab and (ii) open the Microphone properties of the “Flight Sounds - FUSION” and (iii) select Custom tab, as *Figure 4.5 Sound Recording / Mic properties / Custom tab* illustrates.

Step 3: Select the Custom tab

Step 4: Tick/Untick AGC (adjustable gain control)

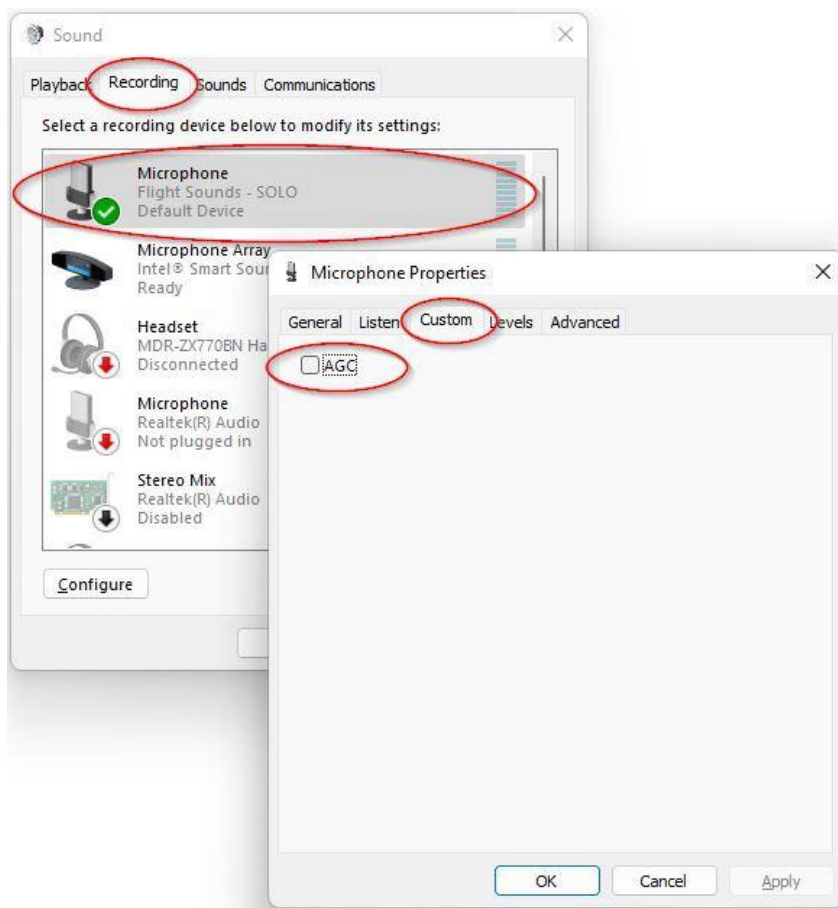


Figure 4.5 Sound Recording / Mic properties / Custom tab

³ Refer to section 4.1.1 to shortcut this process for future

5. Operating Set-Up — macOS 13.0

This section reviews how to set up the *Flight Sounds FUSION* product for use with an Apple computer equipped with the macOS operating system.

When the installation is complete, the *Flight Sounds FUSION* software is ready to use.



Important: While the *Flight Sounds FUSION* may be compatible with older versions of macOS – the setup steps and figures shown may differ.

5.1. Basic Setup

Step 1: Connect one end of the USB cable (supplied) to the *Flight Sounds - FUSION* product and the other end to an available USB port (or hub) on the computer. After the *Flight Sounds - FUSION* product is connected to the computer, the standard macOS driver installs automatically. A custom driver for the *Flight Sounds FUSION* product is not required.

Step 2: Open the System Preferences from the Apple menu. Open the Sound options from the System Environment settings.

Step 3: Select the Input tab and confirm the “Flight Sounds - FUSION” as the recording device as shown in *Figure 5.1 Input Tab - Flight Sounds FUSION*.

Step 4: Select the Output tab and confirm the “Flight Sounds - FUSION” as the playback device, as shown in *Figure 5.2 Output Tab - Flight Sounds FUSION*.

This process confirms the proper recognition of the *Flight Sounds FUSION* by macOS.

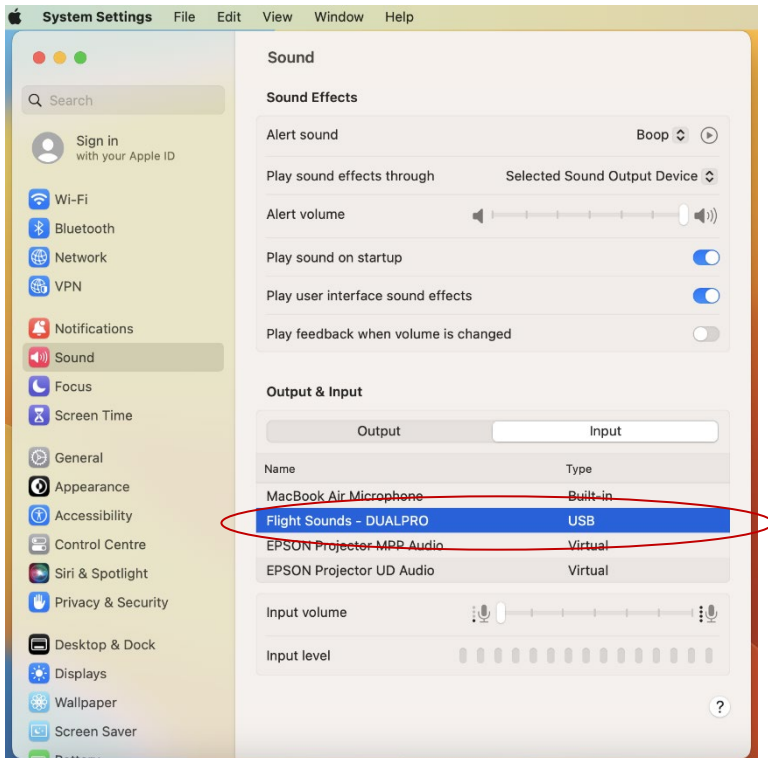


Figure 5.1 Input Tab - Flight Sounds FUSION

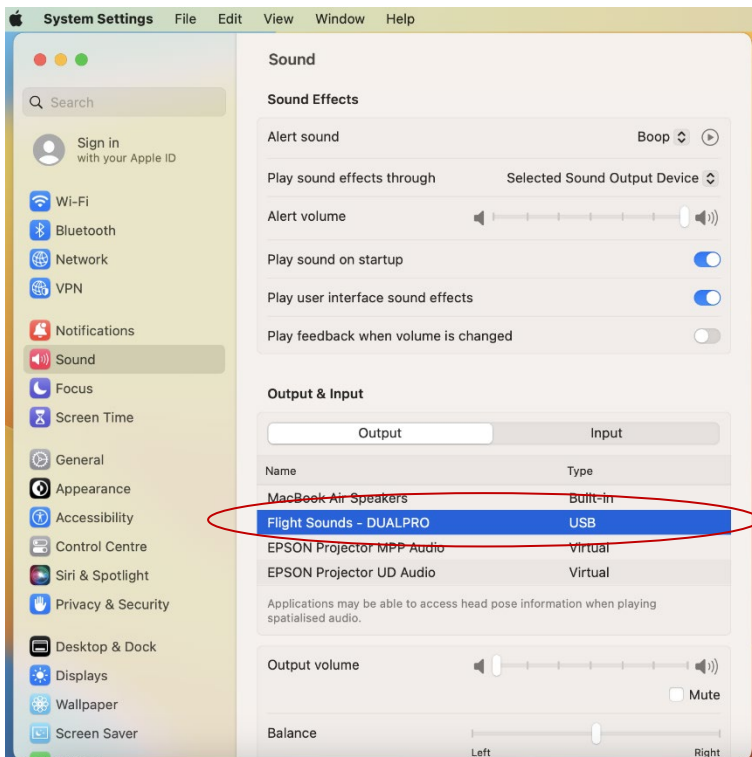


Figure 5.2 Output Tab - Flight Sounds FUSION

5.2. Volume and Mute Settings

Follow these steps to configure the volume settings for headphones, microphone, and the recording options.

To set the headphone volume:

Step 1: Open the System Preferences from the Apple menu. Open the Sound options from the System Environment settings.

Step 2: Select the Output tab and confirm the “Flight Sounds - FUSION” as the playback device, as shown in *Figure 5.2 Output Tab - Flight Sounds FUSION*.

Step 3: Set the output volume, mute, and the balance for headphones from 0 to 100.



It is advised that (For *Flight Sounds FUSION*) to set the Computer Volume to 100 (or close to)

To set the record volume:

Step 1: Open the System Preferences from the Apple menu. Open the Sound options from the System Environment settings.

Step 2: Select the Input tab and confirm the “Flight Sounds - FUSION” as the recording device as shown in *Figure 5.1 Input Tab - Flight Sounds FUSION*.

Step 3: Set the recording volume.

After this process is complete, the system volume setting for each component is maintained even if *Flight Sounds FUSION* is plugged in/out.

6. Peripherals: Cables, Connectors, Controls, Switches

Preparation

Your *Flight Sounds FUSION* product comes with all the Peripherals (cables, connectors, controls, and switches) you need.

The exact Peripherals depend on the model.

Initially, the Connectors, Controls, Switches come joined together on two larger Printed Circuit Boards (PCBs). The larger PCBs are designed to be broken into smaller PCBs.



You will need to carefully break apart the Larger PCBs into Smaller PCBs

Step 1: Remove the larger PCB which has the Audio Connectors and Switch



Figure 6.1 Larger PCB with Connectors - unbroken

Step 2: Carefully flex the end of the PCB back and forth – where it says “**Break Apart Here**” [on the underside] until the PCB breaks into a smaller PCB.

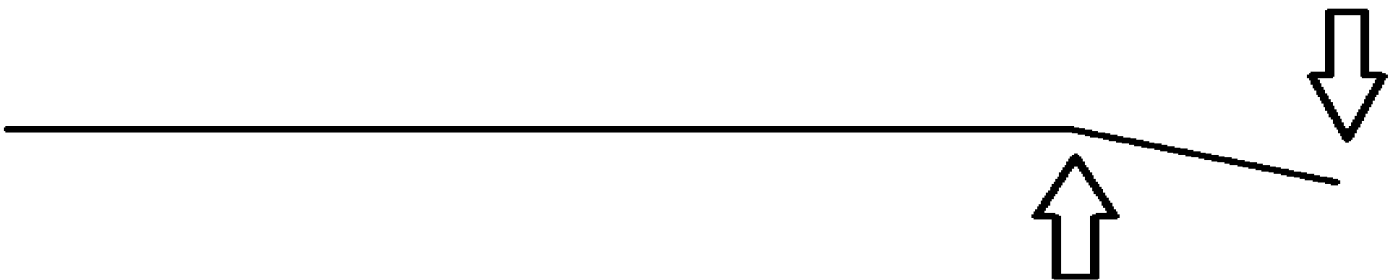


Figure 6.2 Flex the PCB to break apart - as intended

Step 3: Repeat Step 2 until the entire large PCB is broken into smaller PCBs



Figure 6.3 Connector PCB - correctly broken apart

Step 4: Repeat Steps 1-3 for the (Volume/Squelch) Control PCB



Figure 6.4 Volume control PCBs - unbroken (above) and broken (below)

FUSION-HM:

Step 1: Remove the larger PCB which has the Audio Connectors and Switch



Figure 6.5 Larger PCB with Connectors - unbroken

Step 2: Carefully flex the end PCB back and forth – where it says “**Break Apart Here**” [on the underside] until the PCB breaks into a smaller PCB.

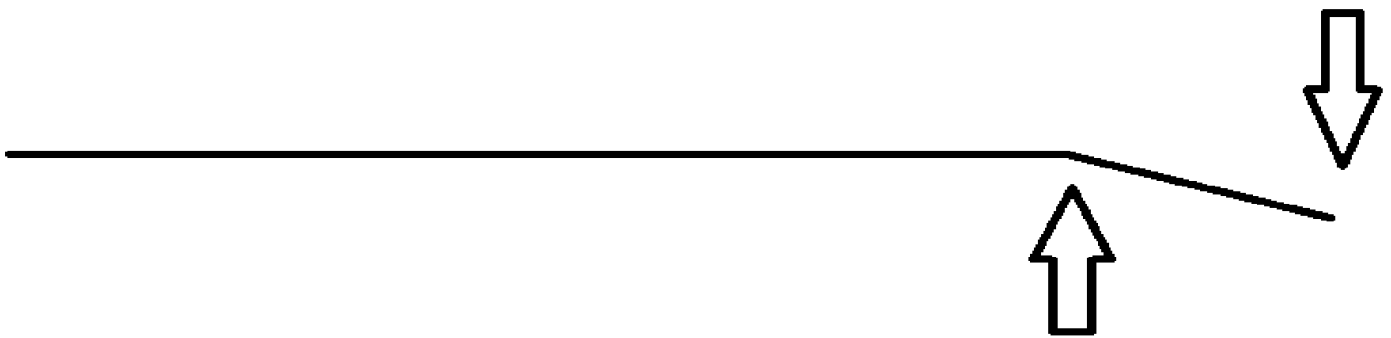


Figure 6.6 Flex the PCB to break apart - as intended

Step 3: Repeat Step 2 until the entire large PCB is broken into smaller PCBs



Figure 6.7 Connector PCB - correctly broken apart

Step 4: Repeat Steps 1-3 for the (Volume/Squelch) Control PCB



Figure 6.8 Volume control PCBs - unbroken (above) and broken (below)

7. Peripherals: Wiring and Testing

7.1. Wiring Diagram

Connect the wiring as per the image below and by following the Wiring Instructions (Section 7.2). Ensure all the connections are made firmly.



LINK EXTENSION CABLES (2m) are available* – should extra cable length be required for any of the cables. (*Sold separately from flightsounds.com)

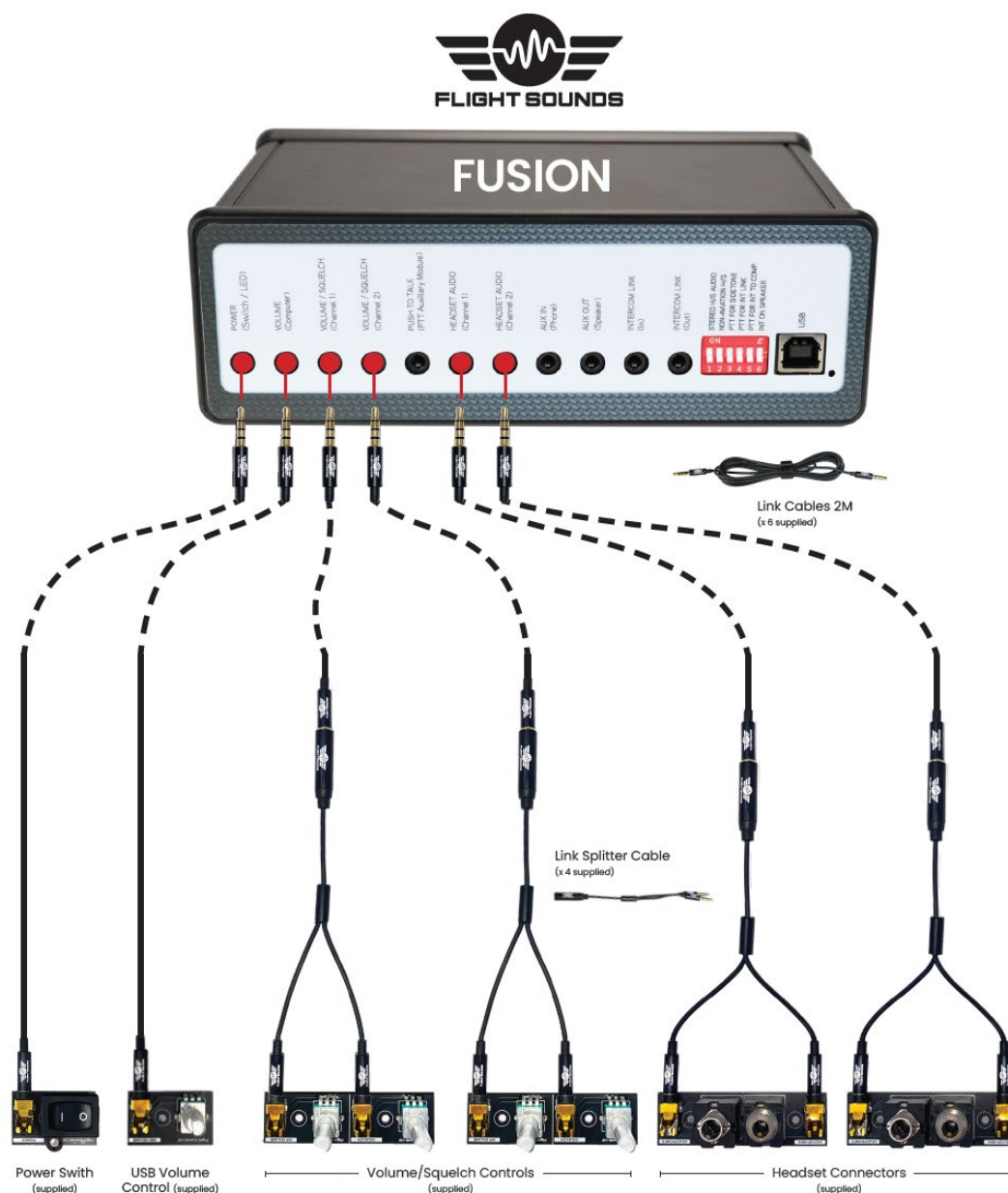


Figure 7.1 Fusion Peripheral Wiring

7.2. Wiring Instructions



Note: In all instances – ensure that all cable plugs are firmly inserted into their respective sockets.

- **Step 1: Port - USB**

- Firmly Connect:
 - One end of the USB cable to the *Flight Sounds FUSION*
 - The other end to a computer
- Action:
 - Ensure Computer is powered on.

- **Step 2: Port – Power (Switch / LED)**

- Firmly Connect:
 - One end of the LINK Cable to the *Flight Sounds FUSION* port labelled “POWER (Switch / LED)”
 - The other end of the LINK CABLE to the small PCB labelled “POWER”

- **Step 3: Port - VOLUME (Computer)**

- Firmly Connect:
 - One end of the LINK Cable to the *Flight Sounds FUSION* port labelled “VOLUME (Computer)”
 - The other end of the LINK CABLE to the small PCB labelled “USB VOLUME”
- Action:
 - Turn Potentiometer to HALF VOLUME

- **Step 4: Port: VOLUME / SQUELCH (Channel 1)**

- **Firmly Connect:**
 - One end of the LINK Cable to the *Flight Sounds FUSION* port labelled “VOLUME / SQUELCH (Channel 1)”
 - The other end of the LINK CABLE to the LINK SPLITTER CABLE
- **Step 4a: Volume**
 - **Firmly Connect:**
 - The other end of the LINK SPLITTER CABLE to the small PCB labelled “H/P Volume”
 - **Action:**
 - Turn Potentiometer to HALF VOLUME
 - **Notes:**
 - It does not matter which female connector is used on the LINK SPLITTER CABLE – any will work.
 - It does not matter which “H/P Volume” PCB is used – any will work.
- **Step 4b: Squelch**
 - **Firmly Connect:**
 - The other end of the LINK SPLITTER CABLE to the small PCB labelled “Squelch”
 - **Action:**
 - Turn Potentiometer to HALF VOLUME
 - **Notes:**
 - It does not matter which female connector is used on the LINK SPLITTER CABLE – any will work.
 - It does not matter which “Squelch” PCB is used – any will work.

- **Step 5: Port: VOLUME / SQUELCH (Channel 2)**

- Repeat the Step 4 except for Channel 2

- **Step 6: Port: HEADSET AUDIO (Channel 1)**

- Firmly Connect:
 - One end of the LINK Cable to the *Flight Sounds FUSION* port labelled “HEADSET AUDIO (Channel 1)”
 - The other end of the LINK CABLE to the LINK SPLITTER CABLE
- **Step 4a: Volume**
 - Firmly Connect:
 - The other end of the LINK SPLITTER CABLE to the small PCB labelled “Headphones”
 - Action:
 - Connect to Aviation Headset
 - Notes:
 - It does not matter which female connector is used on the LINK SPLITTER CABLE – any will work.
 - It does not matter which “H/P Volume” PCB is used – any will work.
- **Step 4b: Squelch**
 - Firmly Connect:
 - The other end of the LINK SPLITTER CABLE to the small PCB labelled “Microphone”
 - Action:
 - Connect to Aviation Headset
 - Notes:
 - It does not matter which female connector is used on the LINK SPLITTER CABLE – any will work.
 - It does not matter which “Microphone” PCB is used – any will work.

- **Step 7: Port: HEADSET AUDIO (Channel 2)**

- Repeat the Step 6 except for Channel 2

7.3. Testing Instructions

At this point the following should have been accomplished:

- All cables and connectors are correctly connected firmly as per 7.2
- All VOLUME potentiometers are turned to HALF VOLUME
- Aviation Headsets are connected – including Microphone and Headphone aspects
- Flight Sounds FUSION is connected to a computer which is turned on.
- Also: Ensure all Switches on the REAR PANEL are off (ie: In the Down position)

- **Step 1: POWER TEST**

- Action:
 - Toggle the POWER SWITCH
- Outcome:
 - Green LED should illuminate as appropriate
- Note:
 - Leave the unit powered for the remainder of the test

- **Step 2: AUDIO TEST – Channel 1**

- Action:
 - Play audio (eg: Music on the Computer)
 - Ensure Computer Volume is unmuted and turned up to ~100%
 - Put headset on
- Outcome:
 - Computer Audio should be heard in the headset
 - Microphone Sidetone audio should be heard in the headset
- Troubleshooting:
 - Issues with Computer audio?
 - Check computer volume
 - Check all connections are securely connected
 - Check USB Volume control is turned up
 - Check Volume (channel 1) is turned up
 - Issues with microphone sidetone
 - Check all connections are securely connected
 - Check Volume (channel 1) is turned up
 - Check Squelch (channel 1) is turned *down*

- **Step 3: AUDIO TEST – Channel 2**

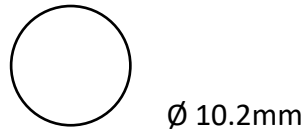
- Repeat test as outlined in Step 2, except for Channel 2

8. Peripherals: Installation

In order to mount the Controls, Connectors and Switch into a panel – refer to the following cut-out dimensions:

8.1. Cut-out: Audio connector

The required cut-out dimension for the microphone and headphone connectors is:

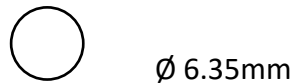


- *Drawing not to scale*

Figure 8.1 Panel Cut-out dimensions - Audio Connectors

8.2. Cut-out: Control Potentiometers

The required cut-out dimension for the potentiometers is:

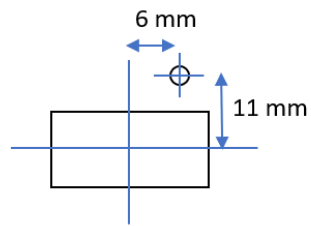


- *Drawing not to scale*

Figure 8.2 Panel Cut-out dimensions - Control Potentiometers

8.3. Cut-out: Switch / LED

The required cut-out dimension for the Switch and LED is:



20mm (L) x 13 mm (W) [Switch Cut out]

Ø 3.2mm [LED hole Cut out]

- **Notes:**

- *Drawing not to scale.*
- *Lines shown are centre to centre*

Figure 8.3 Panel Cut-out dimensions - Power Switch and LED

8.4. Potentiometer Dimensions

The required cut-out dimension for the potentiometers is:

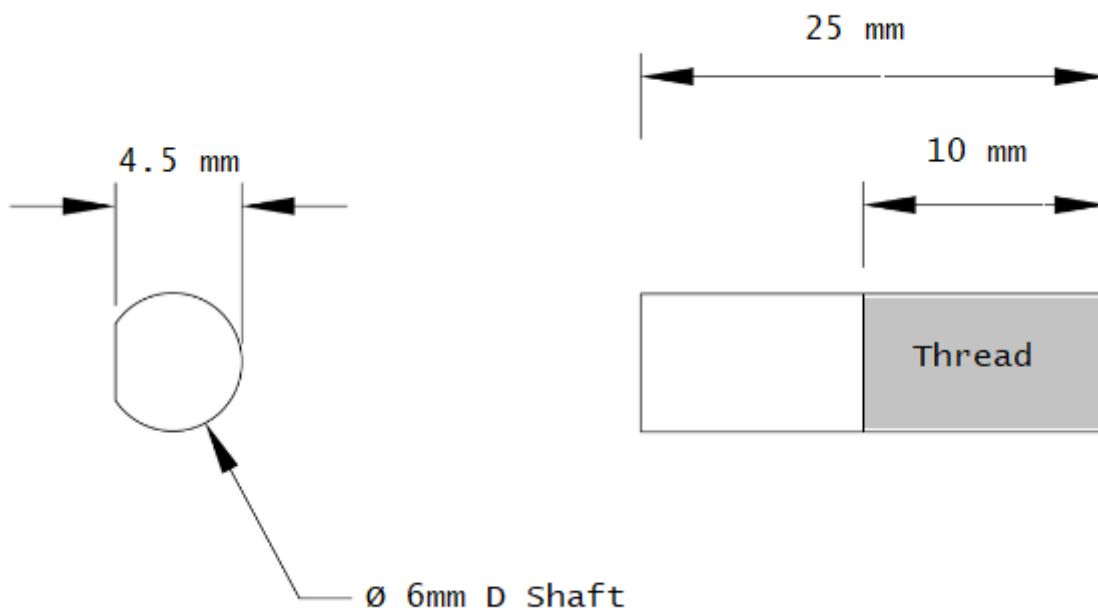


Figure 8.4 Potentiometer Dimensions

8.5. Installation



Only install the Peripheral cables and connectors if they have passed testing (as per section 7.3)

- Install the Peripherals in (cockpit) locations of your choice.
- Use the nuts (supplied) to make the mount secure

Potentiometer Control Knobs

- You may choose to mount your own Knobs – in a style of your choosing.
- Alternatively, Flight Sounds sells Knobs which can be used for your installation.



Potentiometer control knobs are available* from Flight Sounds should they be required. (*Sold separately from flightsounds.com)

Mounting Brackets

- Flight Sounds sells Mounting Brackets for the *Flight Sounds FUSION* which provide a robust and tidy solution to mounting the product in a location of your choosing.
- The mounting brackets feature a reversible design – meaning that they can secure the Product to the topside or underside of (say) a desk.



Mounting Brackets are available* from Flight Sounds should they be required. (*Sold separately from flightsounds.com)



Figure 8.5 Optional Mounting Brackets (Sold Separately)

9. Rear Panel – Cable Connections

The Flight Sounds FUSION has provision for x8 rear panel connections. These are outlined as below:

Referring to *Figure 7.1 The Flight Sounds FUSION - Rear Panel Cable Connections* the following connections are listed from Right to Left



Figure 9.1 The Flight Sounds FUSION - Rear Panel Cable Connections

1. USB

- **Type:** USB Type B socket
- **Connect To:** Computer
- **Function:** Provides Audio Stream Data and Power to the Device

2. Intercom link (Out)

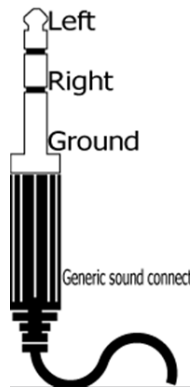
- **Type:** 3.5mm TRRS socket
- **Connect To:** Intercom Link (In) on other DUAL / FUSIONS using *Flight Sounds - Intercom Link Cable* (Sold Separately)
- **Function:** Intercom Link enables multiple devices to be connected – enabling a large multi-channel intercom.

3. Intercom link (In)

- **Type:** 3.5mm TRRS socket
- **Connect To:** Intercom Link (Out) on other FUSIONS using *Flight Sounds - Intercom Link Cable* (Sold Separately)
- **Function:** Intercom Link enables multiple devices to be connected – enabling a large multi-channel intercom.

4. AUX OUT (Speaker)

- **Type:** 3.5mm TRRS socket
- **Connect To:** External Speaker Amplifier or (for example) Audio recording Units.
- **Function:** Enables the intercom to connect to External speaker. Output is pre-amp levels only, so an external power Amplifier will be required to drive a large external speaker.
- **Wiring:** Wiring is standard as per image below



5. AUX IN (Device)

- **Type:** 3.5mm TRRS socket
- **Connect To:** Smart phone or equivalent using *Flight Sounds - Intercom Link Cable* (Sold Separately)
- **Function:** Enables the intercom to connect to (say) a Smart Phone. The Phone is able to receive the intercom sounds and also play sounds (eg: Music) to the Intercom. NB: Control the volume of the phone via the phone's own volume control.
- **Wiring:** Wiring is standard as per image below



6. HEADSET AUDIO (Channel 2)

- **Type:** 3.5mm TRRS socket

- **Connect To:** External Headset, in lieu of using front panel connectors.

OR, connect to *Flight Sounds PTT Auxiliary Module* (Sold Separately) for Hand Mic Support

- **Function:** Enables the user to connect Aviation Headsets, or Non-Aviation Headsets* to the Intercom.

* NB: Support for Non-Aviation Headsets is currently in Beta Development and the feature is supplied "as is".



NB: Users should not simultaneously connect headsets to channel 1/2 on the front panel and channel 1/2 on the rear panel. Damage could result. For expanding the intercom to accommodate additional headsets, use the Intercom Link feature.

- **Wiring:** Wiring is standard as per image below



7. HEADSET AUDIO (Channel 1)

- As per information for HEADSET AUDIO (Channel 2)

8. PUSH TO TALK (PTT Auxiliary Module)

Type: 3.5mm TRRS socket

- **Connect To:** *Flight Sounds PTT Auxiliary Module* (Sold Separately)

- **Function:** Via the *Flight Sounds PTT Auxiliary Module* – the feature enables the users to wire their own PTT Switches, to control various PTT features of the *Flight Sounds – FUSION*.

9. VOLUME / SQUELCH (Channel 2)

10. Type: 3.5mm TRRS socket

- **Connect To:** The small PCB labelled “H/P Volume” – via the LINK CABLE and LINK SPLITTER CABLEs (Both Supplied)
- **Function:** The feature enables the users to wire their own Headset Channel Volume and Microphone Squelch Controls for the *Flight Sounds – FUSION*.

11. VOLUME / SQUELCH (Channel 1)

- As per information for VOLUME / SQUELCH (Channel 2)

12. VOLUME (Computer)

Type: 3.5mm TRRS socket

- **Connect To:** The small PCB labelled “VOLUME” – via the LINK CABLE (Both Supplied)
- **Function:** The feature enables the users to control the volume from the computer.

13. POWER (Switch / LED)

Type: 3.5mm TRRS socket

- **Connect To:** The small PCB labelled “POWER” – via the LINK CABLE (Both Supplied)
- **Function:** The feature enables the users to wire their own Power Switch for the *Flight Sounds – FUSION*.

10. Rear Panel – Settings

The Flight Sounds FUSION has provision for x6 rear panel settings. These are outlined as below:

Referring to Figure 8.1 FUSION - Rear Panel Settings the following connections are listed from 1 to 6.



Figure 10.1 FUSION - Rear Panel Settings

Notes:

- For all settings Users shall move the switch to the up position to turn that particular function ON.
- Users are advised to use a small pen (or equivalent) to move the settings switches.

-

1: Stereo H/S Audio

- **Full wording:** Stereo Headset Audio
- **Description:**
 - Turn setting ON to enable stereo audio to the headsets.
 - Turn setting OFF to revert to mono audio

2: Non-Aviation H/S

- **Full wording:** Non-Aviation Headsets
- **Description:**
 - Turn setting ON to enable support for non-aviation headsets
 - Turn setting OFF to revert to support for aviation headsets



Important:

Enabling this setting changes the amplification of the microphone and the bias voltage.

Only plug in Non-Aviation headsets when this setting is ON. Unplug non-aviation headsets before turning this setting OFF.

3: PTT For Sidetone

- **Full wording:** Push To Talk for Sidetone
- **Description:**
 - Turn setting ON to enable PTT. Specifically, this will enable users to only hear themselves (sidetone) only when a valid* PTT event occurs.
 - Turn setting OFF to revert to sidetone always being on.

NB: * A Valid PTT event can occur by:

- Hardware PTT switches (eg: Custom wired buttons)
- Software / USB PTT switches (eg: Joysticks)

In both instances the *Fight Sounds PTT Mapper Software* (Sold Separately) will be required to use this feature.

4: PTT For Int Link

- **Full wording:** Push To Talk for Intercom Link
- **Description:**
 - Turn setting ON to enable PTT. Specifically, this will enable users “transmit” their intercom audio to another *Flight Sounds (DUAL/FUSION)* Intercom only when a valid* PTT event occurs.
 - Turn setting OFF to continuously ‘transmit’ the intercom audio to another *Flight Sounds (DUAL/FUSION)* Intercom.

NB: * A Valid PTT event can occur by:

- Hardware PTT switches (eg: Custom wired buttons)
- Software / USB PTT switches (eg: Joysticks)

In both instances the *Fight Sounds PTT Mapper Software* (Sold Separately) will be required to use this feature.

5. PTT For Int to Comp

- **Full wording:** Push To Talk for Intercom to Computer
- **Description:**
 - Turn setting ON to enable PTT. Specifically, this will enable users “transmit” their intercom audio to the computer (via USB) only when a valid* PTT event occurs.
 - Turn setting OFF to continuously ‘transmit’ the intercom audio to a Computer (via USB).

NB: * A Valid PTT event can occur by:

- Hardware PTT switches (eg: Custom wired buttons)
- Software / USB PTT switches (eg: Joysticks)

In both instances the *Fight Sounds PTT Mapper Software* (Sold Separately) will be required to use this feature.

6. Int On Speaker

- **Full wording:** Intercom On Speaker
- **Description:**
 - Turn setting ON to enable the intercom audio to flow through to the External Speaker connector (Speaker not included). NB: The Intercom audio will flow to the external speaker IN ADDITION TO computer audio.
 - Turn setting OFF to only have the computer audio flow to the External Speaker connector.

11. Troubleshooting Guide

If you are experiencing some issues with the Flight Sounds FUSION we would encourage you to read through this Trouble Shooting Guide. Please also review the [FAQs](#) on the Flight Sounds website.

Device will not turn on	<p>Ensure Device is plugged into a computer; ensure computer is powered on; ensure that Device is turned on and the green power LED is illuminated.</p> <p>Try a different Computer Try a different USB cable Try using a Powered USB Hub</p> <p><i>Please note: It is not possible to power the Device from a USB power outlet alone.</i></p> <p>If problems persist – contact Technical Support</p>
I can't hear any sounds from the computer	<p>Ensure the headset is plugged in firmly Ensure the computer volume is turned up and un-muted Ensure the Device is on, and the Computer Audio Volume (on the Device) is turned up Ensure the Device Channel Volume is turned up Ensure the cables are firmly plugged in.</p>
I can't hear any microphone sound	<p>Ensure the headset is plugged in firmly Ensure the Device is on Ensure the Device Channel Volume is turned up Ensure the Channel Squelch is turned sufficiently down Ensure that the PTT for Sidetone switch is OFF, or correctly ensure that the PTT is being activated correctly Ensure the correct setting is selected for the Non-Aviation H/S switch on the rear of the Device</p>
The computer is not picking up any microphone audio	<p>Ensure the <i>recording</i> Volume is unmuted and set sufficiently high Ensure that the PTT for Int Comp switch is OFF, or correctly ensure that the PTT is being activated correctly</p>
The audio is Stereo or Mono only	<p>Ensure the correct setting for the Stereo H/S Audio switch on the rear of the Device</p>
Issues with the Switch; Controls; Audio connectors	<p>Ensure the cables are firmly plugged together. Refer to Troubleshooting steps as outlined in section 7.3 Try another cable to see if this solves the issue.</p>

12. Technical Support and Contact Info

Please refer to the Flight Sounds website for the current contact information:

<https://flightsounds.com/pages/contact>

12.1. Limited Warranty

Please refer to the Flight Sounds website for the current Warranty Policy:

<https://flightsounds.com/pages/warranty>

12.2. Terms and Conditions of Service

Please refer to the Flight Sounds website for the current Terms of Service Policy:

<https://flightsounds.com/policies/terms-of-service>

- “This Product” means: FUSION-GA or FUSION-HM (as appropriate)
- FLIGHT SOUNDS reserve the right to make corrections, modifications, enhancements, improvements, and other changes to its products and services at any time and to discontinue any product or service without notice.
- This Product is intended for ADAPTING AVIATION HEADSETS FOR USE WITH USB COMPLIANT COMPUTERS. FLIGHT SOUNDS neither endorses nor supports use of this product outside the scope of its intention.
- This Product is neither designed nor intended for use with mission-critical; business-critical or safety-critical applications (including but not limited to: life support systems; aerospace applications). Buyers acknowledge and agree that any such use of FLIGHT SOUNDS’ products is solely at the Buyer's risk, and that they are solely responsible for and that they are solely responsible for compliance with all legal and regulatory requirements in connection with such use.
- The user assumes all responsibility and liability for proper and safe handling of the device. Further, the user indemnifies FLIGHT SOUNDS from all claims arising from the handling or use of the device.
- Except to the extent of the indemnity set forth above, neither party shall be liable to the other for any indirect, special, incidental, or consequential damages.

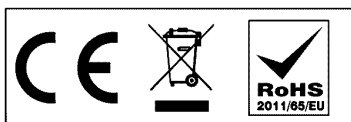


Figure 12.1 Regulatory compliance markings