

Installation Guide

Audio Checklist

(NORSEE Certified Edition)

Models:

1- Audio Checklist

2- Audio Checklist with Voice Recorder

Date: 05/23/2024

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Rev A2

Revision History

Revision	Date	Description
A	04/01/2024	First Release
A1	04/22/2024	Added Push Buttons to units without voice recorder
A2	05/23/2024	Added note about Pressurized airplane installation.

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1 Limited Warranty / Disclaimers

Microkit Solutions LLC warrants this product for materials and workmanship for a period of one year starting from the date of installation. Microkit Solutions, at its sole discretion, will either repair or replace this product if found to be defective due to material or workmanship during this period and under normal use.

This limited warranty does not cover units which have been opened, disassembled, altered, modified, or tampered with in any form. This warranty does not apply to cosmetic damage, damage caused by accident, misuse, abuse, fire or flood, theft, improper connections, or installation errors.

All repair and/or replacement under this warranty are free to the customer. However, the customer is responsible for any shipping charges and any related removal and reinstallation costs.

This warranty covers the original purchaser only. This limited warranty is not transferable to subsequent purchasers or owners of this product.

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2 Introduction

The Microkit Audio Checklist is a digital device that plays pre-stored audio files checklists using the airplane intercom or audio panel. It comes with a remote control which is used to trigger playing the checklist when required.

Owners/Operators are able to upload their own checklists using the built-in WiFi interface. The remote control offers direct access to specific checklists such as the “Emergency Checklist” using a single dedicated button, and it also offers fast navigation to the next checklist that needs to be played once the button is pressed. Please refer to the separate “**Audio Checklist User’s Guide**” for more information on how to operate the unit.

There are two models of the Audio Checklist; a stand-alone unit that only offers the Audio Checklist feature, and a combined unit that adds Microkit’s VBox (Voice Recorder) feature to the same unit. The unit uses WiFi to download saved voice recordings for the Audio Checklist & Voice Recorder model. The Audio Checklist & Voice Recorder model offers voice recording for 50 operational hours. All recordings are looping; this means once full, the unit records over from the beginning, resulting in the last 50 hours remaining available for download.

NOTE: This Audio Checklist is not a replacement for an actual airplane approved checklist. Microkit’s Audio checklist is designed to be an extra aid, pilots/operators should still carry the airplane approved checklist to satisfy any regulations or requirements.

3 Specifications

- Voltage Supply: 9V-28V (30V MAX)
- Power consumption: 0.5W Nominal; 80mA @ 12V Peak
- Operating Temperature: -4° F (-20° C) to +140° F (60° C)
- Storage Temperature: -4° F (-20° C) to 185° F (85° C)
- Weight: 6 oz.
- Dimensions: 4" x 3" x 1.5"
-

4 Installation Instructions & Limitations

Installers are required to read this section fully before starting the installation and to note any limitations for the installation of this Voice only or Voice & Data Recorder.

Installation of this system is supplemental only; it is not intended as a replacement for or modification to an existing, approved, or required system. No operational credit may be taken for installation of this system.

4.1 Installers

This unit must be installed by an authorized mechanic for the Aircraft type and model. Installers are required to log the installation appropriately. The installation of the Voice only or Voice & Data Recorder is considered a 'minor alteration'.

4.2 Location

All models include mounting flanges. Installers are required to mount the unit hidden from view at an appropriate location with an appropriate mounting plate if required. The unit is very light (6 oz)

and can be installed at various locations (preferably behind the aircraft instrument panel)

Do not install the unit within 2” of wiring that carries high-current, such as alternator or battery wiring. Do not install the unit within 12” of transmitting antennas such as Radio antenna, Transponder Antenna or ADS-B out Antenna.

Any adjacent cables, control rods or moving parts must be checked for its full movement range. The unit can be installed at any angle, or orientation, including upside down.

For installation on a Pressurized Airplane; penetration of the pressurized vessel to allow for routing wires may be considered a major alteration and may require further FAA approval if the approved penetration wire connectors are not used. It is recommended to install the unit inside the pressurized vessel.

4.3 Connection Limitation

A dedicated 1A circuit breaker with Push/Pull feature is the recommended method for aircraft power connection to the unit. This circuit breaker must be labeled appropriately, such as “Checklist” or “Recorder”. The unit can also share power with non-essential equipment only.

4.4 Wiring

Depending on the unit or features ordered, All models come with either a Quick-Disconnect Aviation Connector or a Quick Disconnect Aviation plug pre-wired with a 7-color coded wiring harness. Use AWG24 or better shielded cables. Refer to each section below.
Refer to the Wiring Diagram on Sections 6 & 7 of this guide.

Units with Voice Recorder Options:

PIN	Color	Function
1	Red	+12V/28V Power Supply
2	Black	Aircraft Ground
3	Yellow	Headphone Sleeve (Voice Recorder Model)
4	Blue	Headphone Tip (Voice Recorder Model)
5	Green	Audio LO
6	White	Audio HI (Output)
7	Brown	Aircraft Ground (Internally connected to Pin 2)

Units without Voice Recorder Options:

PIN	Color	Function
1	Red	+12V/28V Power Supply
2	Black	Aircraft Ground
3	Yellow	External Push Button Trigger #2
4	Blue	External Push Button Trigger #1
5	Green	Audio LO
6	White	Audio HI (Output)
7	Brown	Aircraft Ground (Internally connected to Pin 2)

4.4.1 Power Supply (Pins 1 & 2)

It is recommended to use a 2-core shielded cable with all shields to be combined and attached to the Aircraft Ground from one end.

4.4.2 Audio Output (Pins 5 & 6)

It is recommended to use a 2-core shielded cable with all shields to be combined and attached to the Aircraft Ground from one end.

For Audio panels that do not offer an Audio LO pin, you can leave Pin 5 unconnected.

Audio HI output can be connected to 500 ohm impedance audio channel input, and other digital audio channel inputs.

NOTE: Unit comes preconfigured to play “System OK” when Remote Button 2 is pressed. Activate the remote by removing the Battery Tab, press Button 2 to confirm audio connection installation is complete.

4.4.3 Pins 3 & 4

1) For Models without Voice Recorder option

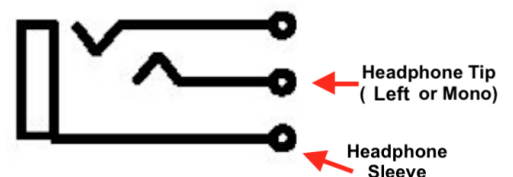
Optional Push Buttons interface (triggered with a ground connection). Refer to the Wiring Diagram on Sections 7.

2) For Models with Voice Recorder option

Headphone Jack Connection (Voice Recorder option)

Do not remove any existing wiring from the headphone Jack. Connections mentioned here are (EXTRA or SPLICED) and not INSTEAD

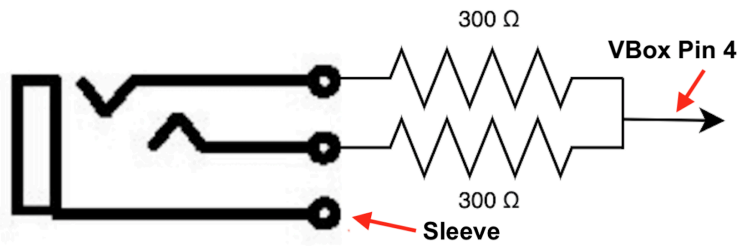
Use a 2-core shielded cable with the shield joined as above. Pin 3 (Yellow) connects to the Sleeve at the back of any headphone jack. Pin 4 (Blue) connects to the Tip (Left Channel) at the back of any headphone jack.



FOR 3D AUDIO

Airplanes that have a 3D capable Audio Panel and using Stereo headsets are still able to use the above connection method. New panels are offering 3D Audio, allowing pilots to set up the active channel to be heard on one ear while the standby channel to be heard on the other ear. However, using the above method causes the Ring (Right channel) to be recorded at a lower volume when 3D Audio is active. To record 3D audio, installers can use two 300 ohm resistors and join both Left & Right channels to the single audio wire of the unit (Pin 4: **Blue**).

Refer to the following diagram for resistor connections.



For Stereo or Mono Headsets without 3D, a resistor is not required, and the unit can connect directly to the Tip of the headphone jack.

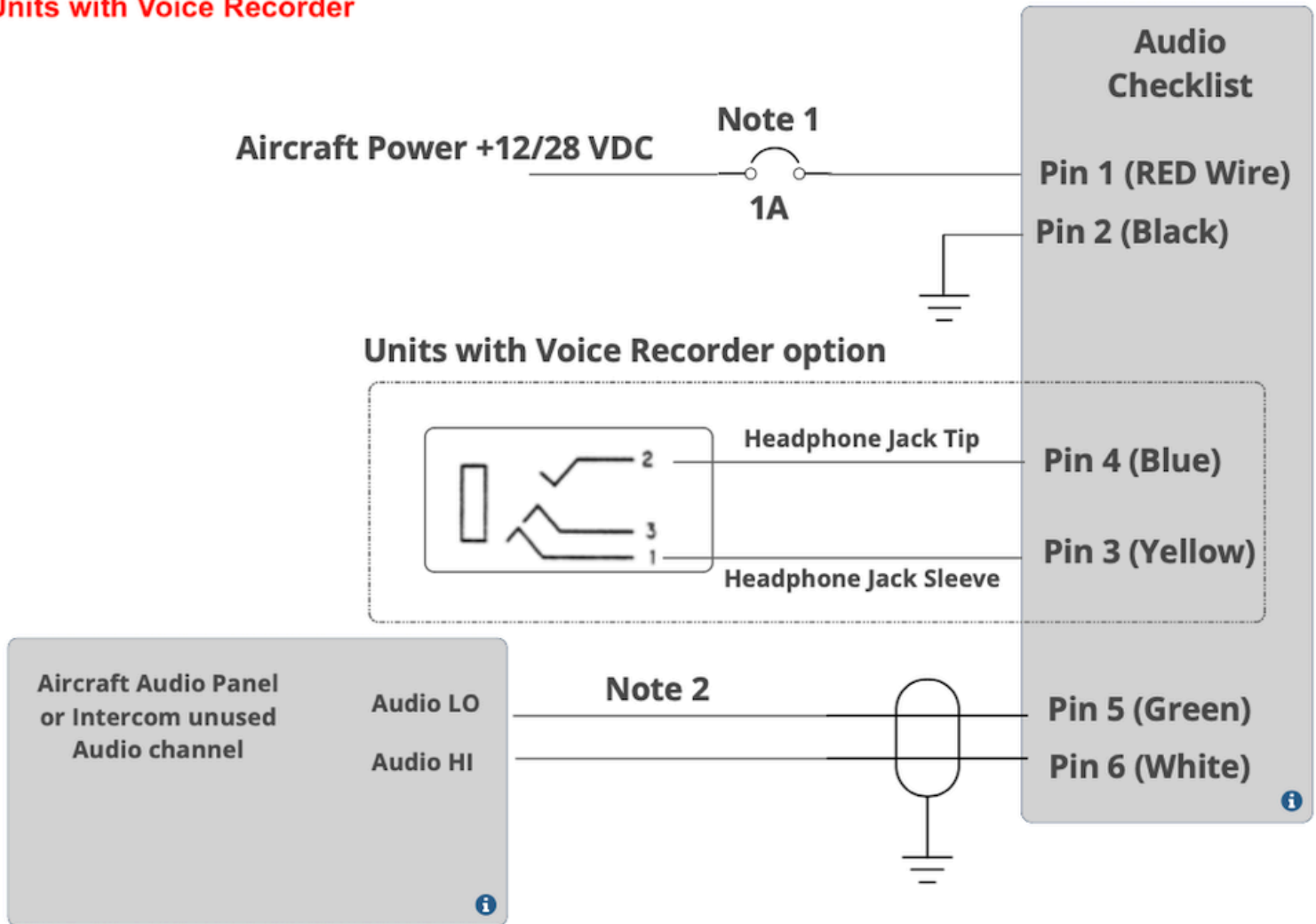
5 Maintenance

All models do not require any field maintenance or inspection.

6 Wiring Diagram (With Voice Recorder)

Audio Checklist Wiring Diagram

Units with Voice Recorder

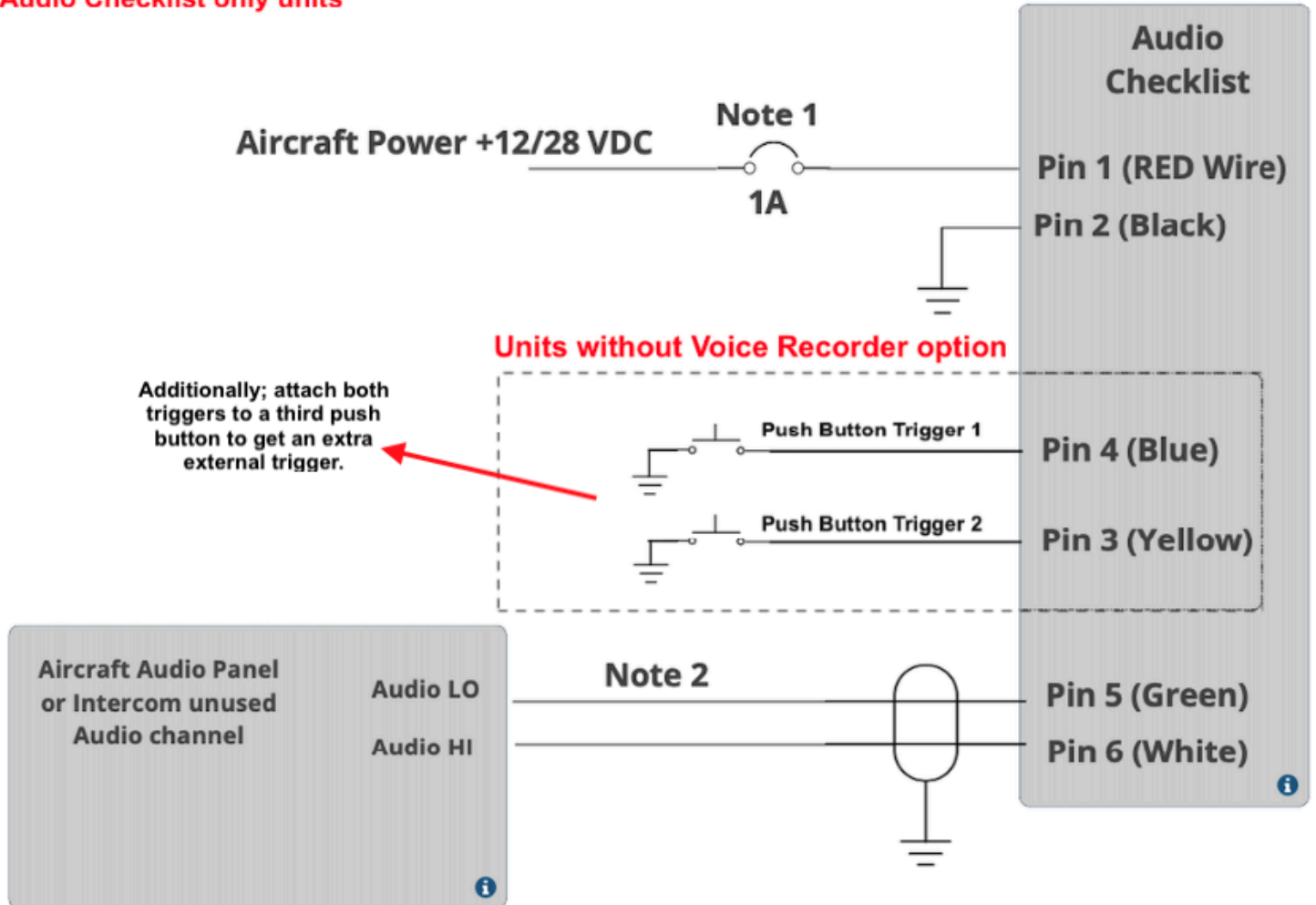


Note 1: 1A Push/Pull Circuit Breaker or shared with non-essential equipment

Note 2: Leave unconnected for single ended Audio channels with no Audio LO pin

7 Wiring Diagram (Stand-alone)

Audio Checklist Wiring Diagram Audio Checklist only units



Note 1: 1A Push/Pull Circuit Breaker or shared with non-essential equipment

Note 2: Leave unconnected for single ended Audio channels with no Audio LO pin