

PS ENGINEERING[®] INCORPORATED

Sound Quality. Sound Engineering.

9800 Martel Road
Lenoir City, TN 37772
www.ps-engineering.com

PAC37

For Dual Audio Panel Installations



Pilot's Guide and Operation Manual

202-370-0001

Revision 0

October 2024



Covered under one or more of the following:
Patent No. 4,941,187, 6,493,450, 7,391,877
FAA-Approved: TSO C139a

Flying never sounded so good[®]

PS Engineering, Inc. 2024 ©
Copyright Notice

Copyrighted information in this manual is subject to change without notice. PS Engineering reserves the right to improve or change the products or contents of this manual, without notification of any person or agency. The contents of this pilot's guide may be downloaded, stored and reprinted for personal use provided that this copyright information is included. Commercial use is strictly prohibited. For further information contact the Publications Manager at PS Engineering, Inc., 9800 Martel Road, Lenoir City, TN 37772. Phone (865) 988-9800



This pilot's guide provides operating instructions for the PAC37 Audio Panel. Please read it carefully before using the equipment so that you can take full advantage of its capabilities.



Power Switch (EMG-Fail Safe Operation)

The power switch controls all audio selector panel functions and removes power to the audio panel.



When the unit is off, either by pressing EMG (red button), *or* if the breaker is pulled removing power, the PAC37 is in Fail-Safe mode. In this mode, AUDIO and MICROPHONE selections can still be made but volume controls are inoperative. Since the unit is not powered, volumes may appear to be reduced. The oxygen mask control remains operative as well.

Communications Transmit (MICROPHONE) Selection

To select any "Microphone" for transmit, press the button on the bottom row. For transceivers, the corresponding MICROPHONE and AUDIO indicators will indicate that you will transmit **and** receive on the selected radio.

Only one transmitter can be selected by each crew member at a time. If both the pilot and copilot select the same transmitter, there will be **no** priority for radio push-to-talk.



NOTE

Due to the nature of VHF signals, and size constraints on some aircraft, it is possible that there will be some bleed-over when multiple flight crew members transmit at the same time on different radios, particularly on adjacent frequencies. PS Engineering makes no warranty about the suitability of multi transmit in all aircraft installations.

Radio PTT Transmit Indication

When the TX PTT switch is pressed, the selected radio text will flash, indicating keying activity on that particular radio is active.



Stuck Microphone (PTT) Protection

The PAC37 will sense if the TX PTT remains keyed for more than 32 seconds. When a stuck mic is detected, the TX PTT input is ignored. When the stuck condition clears, normal operation is restored.

Intercom Active in transmission (TXI)

Normally the microphones are muted from the intercom during radio transmissions. If desired, the PAC37 can be configured at installation to keep intercom active during radio transmit for additional Crew Resource Management.

Communications Receive (AUDIO) Selection

To listen to communication radios, press the desired volume knob so that it pops out. The label will indicate it is selected. When a com is selected for receive, it will stay selected even if you select, and then deselect its microphone.



Radio Activity Indication (RXI)

Any *selected* receiver indicator will flash when an audio signal is present on that receiver. This allows the user to spot an active radio, even if the volume is turned down. Consult your installing shop to activate this function.

Navigation Receive (AUDIO) Selection

To listen to navigation radios, press the desired volume knob so that it pops out. The label will indicate it is selected.



Cockpit Speaker (SPK) Selection

Press the SPK volume knob so that it pops out to place all selected audio on the cockpit speaker.

Important audio alerts such as radar altimeter or autopilot disconnect will come over the speaker even when SPK is not selected.



Public Address (PA) & Baggage (BAG) Selections

Press the PA switch to prepare the PA for broadcast. The user's microphone will be heard on the PA speaker when that crewmember's TX PTT is pressed. Other crewmembers can continue to use their audio panels normally.

Press the BAG switch to enable intercom operation to the baggage location.



Intercom (MIC) Selection (VOX/PTT/MIC)

Press the MIC button to select from 3 different intercom modes: VOX, PTT ICS and Hot MIC.

IntelliVox[®] Automatic Squelch

When VOX is green, PS Engineering's proprietary intercom squelch control is selected. Each microphone is individually monitored and opens instantly when speech is detected. This results in seamless conversations in noisy flight-deck environments without syllable clipping or fatigue-inducing noise.

No squelch adjustment is necessary. There is no field adjustment. The system is designed to block continuous tones, therefore humming or whistling in monotone may be blocked after a few moments.

For consistent performance, any headset microphone **must** be placed within $\frac{1}{4}$ -inch of your lips, preferably in contact with them. It is important to have the microphone element parallel to your mouth, and not twisted inside the cover.

You should also keep the microphone out of direct airflow. Moving your head through an air stream may cause IntelliVox[®] to open momentarily. This is normal. IntelliVox[®] is designed to work with normal aircraft cabin noise levels (70 dB and above). Therefore, it may not always recognize speech and

clip syllables in a quiet area, such as in the hangar, or without the engine running. This is also normal.

Push To Talk Intercom (PTT)

When **PTT** is green, the ICS PTT switch must be used to communicate over the intercom.

Hot MIC (MIC)

When PTT and VOX are not selected the system is in hot mic mode.

Oxygen (MASK) Selection

The PAC37 oxygen MASK button activates the oxygen mask for that user. Receive audio can be heard either over the headset or through the cockpit speaker, this includes intercom audio.

Head Related Transfer Function (HRTF) Selection

Patented feature that places COM 1 in the 10 o'clock position while COM 2 will sound as if it is coming from the 2 o'clock position.

Any additional com selection will be heard from the 12 o'clock location.

Navaid Identifier Filter (FILT) Selection

The PAC37 is equipped with an identifier filter that will remove the morse code identifier for clearer reception of voice transmissions via VOR.

The filter affects the NAV 1, NAV 2 and ADF inputs.

Intercom Volume Control (ICS) Selection

Press the ICS volume knob so that it pops out to join the crew intercom. The green text above the knob (ICS) will be lit green. Deactivating the intercom by pushing the switch in will isolate the user from the intercom allowing them to hear radio & nav aids only.



To adjust the volume of the intercom, turn the knob clockwise for louder, counter clockwise for lower intercom volume. It has no effect on selected radio levels or music input levels.



Mono Headsets in Stereo Installation

The PAC37 is "plug-and-play" to existing Baker 1045 systems, which were monaural. If stereo is desired for dimensional sound and stereo music, then please consult your avionics shop.

Bluetooth[®] Telephone

Each PAC37 supports separate Bluetooth connections. This allows each



crew member to connect their cellphone and make Bluetooth phone calls from their independent audio panel.

To connect, you must pair your cellphone via Bluetooth associated with the PAC37 that you are using. During the Bluetooth search, the naming will be either **PAC37 Pilot** or **PAC37 Copilot** as set during installation. To make a phone call, press the TEL volume knob so that it pops out. Dial the desired number from your cellphone, and use the TEL volume control to adjust the cellphone audio level.



Once complete, you can press the TEL switch in to disconnect the cell phone call.

Cellphone Sidetone

The PAC37 audio panels provide cellular telephone sidetone (the user's voice fed back to the headset).

Music Input

The PAC37 supports both Bluetooth *and* wired music (is connected).

Press the MUSIC volume knob so that it pops out to hear music. When selected, the MUSIC text will be green. To remove music from your headset, push the switch inward.



The PAC37 features the SoftMute™ function which removes the music whenever there is radio or intercom activity. When that activity stops, the music gradually returns to the previous level.

This function can be overridden by holding down the HRTF button for 3 seconds. In this mode, music will *never* mute except when pressing TX PTT and for unswitched/direct aural alerts.



Warranty & Service

In order for the factory warranty to be valid, the installations in a certified aircraft must be accomplished by an FAA-(or other ICAO agency) certified avionics shop and authorized PS Engineering dealer.

PS Engineering, Inc. warrants this product to be free from defect in material and workmanship for a period of two (2) years from the date of retail sale by authorized PS Engineering dealer. During the first **twelve (12) months** of the two-year warranty period, PS Engineering, Inc., at its option, will send a replacement unit at our expense if the unit should be determined to be defective after consultation with a factory technician. For the remaining **twelve (12) months** of the three-year warranty period, PS Engineering will send a no-cost replacement unit at customer shipping expense.

All transportation charges for returning the defective units are the responsibility of the purchaser. All domestic transportation charges for returning the exchange or repaired unit to the purchaser will be borne by PS Engineering, Inc. The risk of loss or damage to the product is borne by the party making the shipment, unless the purchaser requests a specific method of shipment. In this case, the purchaser assumes the risk of loss.

This warranty is not transferable. Any implied warranties expire at the expiration date of this warranty. PS Engineering SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. This warranty does not cover a defect that has resulted from improper handling, storage or preservation, or unreasonable use or maintenance as determined by us. This warranty is void if there is any attempt to disassemble this product without factory authorization. This warranty gives you specific legal rights, and you may also have other rights, which may vary from state to state. Some states do not allow the exclusion of limitation of incidental or consequential damages, so the above limitation or exclusions may not apply to you.

All items repaired or replaced under this warranty are warranted for the remainder of the original warranty period. PS Engineering, Inc. reserves the rights to make modifications or improvements to the product without obligation to perform like modifications or improvements to previously manufactured products.

Factory Service

The units are covered by a three-year limited warranty. See warranty information. Call PS Engineering, Inc. at (865) 988-9800 before you return any unit. This will allow the service technician to provide any other suggestions for identifying the problem and recommend possible solutions.

After discussing the problem with the technician and you obtain a Return Authorization Number, ship product to:

PS Engineering, Inc.
Attn: Service Department
9800 Martel Rd.
Lenoir City, TN 37772
Phone (865) 988-9800 FAX (865) 988-6619
Email: contact@ps-engineering.com

Units that arrive without an RMA number, or telephone number for a responsible contact, will be returned un-repaired. PS Engineering is not responsible for items sent via US Mail.



Scan for Warranty Registration



PAC37 Serial Number: _____

Installed by: _____

Installation date: _____