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PMA8000B MP3

**Audio Selector Panel
Marker Beacon Receiver
High-fidelity Stereo Intercom System
With internal MP3 player**



Flying Never Sounded So Good! ®

Pilot's Guide and Operation Manual

202-890-0602

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For units with S/N E10251 and above.

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This pilot guide provides detailed operating instructions for the PS Engineering PMA8000B MP3, Audio Selector Panel/Intercom.

This publication covers the basic operating areas of the PMA8000B MP3 systems. They are Com Transceiver Selection, Audio Selector, Intercom, Marker Beacon Receiver, utility jack, MP3 player and the configuration buttons.



PMA8000B MP3 controls

Power Switch (1) (EMG-Fail Safe Operation)

You turn the unit on an off by pressing the volume control on the left side of the panel.

The power switch controls all audio selector panel functions, intercom and marker beacon receiver. The audio selections will be remembered and return to the last state when the unit is turned on.

Either when the unit is turned off, by pressing the volume control, *or* if the breaker is pulled removing power, the PMA8000B MP3 is in Fail-Safe mode. In this mode, the pilot's headset is connected to Com 1 for transmit and receive, and connected to unswitched input #1 for priority audio alerts. The fail safe audio will *only* be heard in the left ear of a stereo headset.

Communications Transmit (XMT) Selection (2)

There are two pushbuttons associated with each communication radio. The two lower buttons (# 2) (XMT) control which radio is selected for transmit. The top row of pushbuttons (# 3) (RCV) allows selection



of the received audio.

To select Com 1 or Com 2 for transmit, simply press the button on the bottom row, next to the XMT legend. Both the bottom and top button indicators will light, showing you that you can transmit **and** receive on the selected radio. The audio panel automatically selects the receiver, and will not allow you to transmit on a radio without being able to hear the receive audio.

Communications Receive (RCV) Selection (3)

If you want to listen to the other radio, press the upper button, in the RCV (receive) section.

When you have a com selected for receive, it will stay selected until you manually deselect it. For instance, if you set Com 1 for clearance delivery and Com 2 for Ground Control, transmit on Com 1 to get clearance, but want to contact ground you can switch between transmitters without having to re-select the receivers. In essence, switching the mic selector will not override prior selection of Com receiver audio

If the **Monitor** function is activated (Function B), the audio from this radio will be muted when the primary radio (selected for transmit) is receiving a signal. Monitor is not active in Split mode.

Unless the audio panel is in “split” mode, the PMA8000B MP3 gives priority to the pilot’s radio Push-To-Talk (PTT). If the copilot is transmitting, and the pilot presses his Push-To-Talk (PTT), the pilot is then heard over the radio. .

In TEL mode, the pilot microphone and headphones are connected to the cell phone, but you still hear the Com radios selected. The radio PTT will switch the mic to the selected com transceiver, and allow continued aircraft communications to continue. (See Page 6—TEL—for more details).

Audio Selector (4)

You select the switched navigation receivers, **Nav 1**, **Nav 2**, **ADF MKR** (Marker) and Auxiliary (**AUX**) by pressing the desired button, and an indicator will show you which are turned on. Pushing the button again removes that audio from the selection. The DME input (if present) is also shared with **AUX**.

In SPLIT mode, only the pilot will hear selected navigation audio.

Cockpit Speaker (6)

The **SPR** switch will place all selected audio on the cockpit speaker when this switch is selected. The speaker will carry the audio as heard by the pilot.



Unswitched audio 1, 3 and 4 (the inputs dedicated to autopilot disconnect, altimeter warning, etc.) will come through the speaker regardless of the speaker button position.

Depending on installation, important audio annunciations such as radar altimeter or autopilot disconnect will come over the speaker even if it is not selected, while other unswitched, but muted inputs, such as GPS alerts, will only be present if the **SPR** button is selected. Consult your professional avionics installer for these important configuration details.



Intercom Operation

IntelliVox[®] VOX-Squelch

IntelliVox[®] is PS Engineering's proprietary intercom squelch control. Through the use of digital signal processors, the each individual microphone input is monitored, and opens instantly when human speech is detected. This results in seamless conversations aboard the airplane for crew and passengers, without annoying syllable clipping or fatigue-inducing noise.

No adjustment of the *IntelliVox*[®] squelch control is necessary. There is no field adjustment. Through three individual signal processors, the ambient noise appearing in all six microphones is constantly being sampled. Non-voice signals are blocked. When someone speaks, only their microphone circuit opens, placing their voice on the intercom.

The system is designed to block continuous tones, therefore people humming or whistling in monotone may be blocked after a few moments.

For consistent performance, any headset microphone **must** be placed within ¼-inch of your lips, preferably against them. (ref: *RTCA/DO-214, 1.3.1.1 (a)*). It is important to have the microphone element parallel to your mouth, and not twisted inside the cover.

Note: For optimum microphone performance, we recommend use of a



Microphone Muff Kit from Oregon Aero (1-800-888-6910). This will not only optimize VOX performance, but will improve the overall clarity of all your communications.

It is also a good idea to keep the microphone out of a direct wind path. Moving your head through a vent air stream may cause the *IntelliVox*® to open momentarily. This is normal.

The *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 cabin, such as in the hangar, or without the engine running. This is also normal.

Intercom Volume Control (7)

The small volume control knob adjusts the loudness of the intercom for the pilot and copilot. It has no effect on selected radio levels, music input levels or passengers' volume level.

The larger, outer volume control knob controls intercom volume for the passengers. It has no effect on radio or music levels.

Adjust the radios and intercom volume for a comfortable listening level. Most general aviation headsets today have built-in volume controls; therefore, volume also can be further adjusted at the individual headset.

Mono Headsets in Stereo Installation

The pilot and copilot positions work with stereo or mono headsets. If a monaural headset is plugged in to a PMA8000B MP3 Stereo installation, one channel will be shorted and all passengers will lose one channel unless they switch to the "MONO" mode on the headset.



Intercom Modes (8)

The "ICS" pushbutton switch on the left side of the panel provides the selection of the three intercom modes. The description of the intercom mode function is valid only when the unit is not in the "Split" mode. Then, the pilot and copilot intercom is controlled with the **Mute** button.

The ICS button cycles through the intercom modes, from top to bottom and then back up, ISO, ALL, Crew, ALL, and ISO. An LED shows the active mode .



ISO: The pilot is isolated from the intercom and is connected only to the aircraft radio system. He will hear the aircraft radio reception (and sidetone during radio transmissions).

While in ISO Mode, the pilot can elect to hear music #1. First, be sure that the ISO mode is selected. Then press and hold the TEL button, and then hold the ICS mode button for more than one second. The ICS indicator will blink slowly to indicate music is present in ISO. The music muting will follow the selected modes.

The copilot and passengers will hear the music sources as configured by the audio panel configuration Function keys. See page 11—Smart Function Keys for more details.

ALL: All parties will hear the aircraft radio and intercom. Crew will hear Entertainment 1, passengers can hear Entertainment 1 or 2. During any radio or intercom communications, the music volume automatically decreases. The music volume increases gradually back to

Note: For optimum microphone performance, we recommend use of a Microphone Muff Kit from Oregon Aero (1-800-888-6910). This will not only optimize VOX performance, but will improve the overall clarity of *all* your communications.

Headset Manufacturer	Model	Part Number
Bose	Dynamic	90010
	Electret	90015
	M87	90020
David Clark	H10-30	90010
	H10-20, H10-40	90015
	H10-13.4, 13X	90015
	H20-10X	90015
Lightspeed	All	90015
Peltor	7003	90010
	ANR Pro, 7000	90015
Pilot	11-20, 11-90, 1776, DXL	90015
Sennheiser	All	90015
Telex	Airman 750, AIR4000	90010
	AIR3000, Echelon 100	90015

the original level after communications have been completed.

CREW: Pilot and copilot are connected on one intercom channel and have exclusive access to the aircraft radios. Again, the music that the crew and passengers will hear is determined by the Smart Function Keys.

Marker Beacon Operation (10)

The Marker Beacon Receiver uses visual and audio indicators to alert you when the aircraft passes over a 75 MHz transmitter.

The Blue lamp, labeled “O”, is the Outer Marker lamp and has an associated 400-Hertz 'dash' tone. The lamp and tone will be keyed at a rate of two tones/flashes per second when the aircraft is in the range of the Outer Marker Beacon.

The Amber lamp, labeled “M”, is the Middle Marker lamp and is coupled with a 1300 Hertz tone. It is keyed alternately with short 'dot' and long 'dash' bursts at 95 combinations per minute.

The White lamp, labeled “I”, is the Inner marker and has a 3000 Hertz 'dot' tone. The lamp and tone will be keyed at a rate of six times per second.

The audio from the Marker Beacon Receiver can be heard by selecting the "MKR" push-button switch. To adjust the volume level,



there is a service adjustment located on the top of the unit.

A pushbutton is used to set the receiver sensitivity and to test the indicator lamps mute the marker audio.

Use "HI" sensitivity initially. This allows you to hear the outer marker beacon about a mile out. Then touch the smaller MKR button to switch into Low Sensitivity mode. “LO” sensitivity gives you a more accurate location of the Outer Marker. Holding the MKR button for one second activates marker test indicator, labeled "T/M" and illuminates all three lamps simultaneously to assure the lamps (internal and external) are in working order. Test mode does not activate MM autopilot sense output. Releasing the button returns to the last sensitivity.

Pressing the marker mode select (“T/M”) for one second will also

cause the marker audio to mute for that beacon. The next beacon received will re-activate the audio.

Telephone (TEL) (9)

The TEL mode serves as a full duplex interface and distribution for telephone systems such as portable cellular phones with earpiece jacks. Pressing the TEL button connects the telephone to the users as follows:

In **ALL** intercom mode, all crew and passengers will be heard on the phone when they speak. Com and other selected radio audio is also heard in the headsets. If the pilot or copilot pushes the radio PTT, their mic will be transferred to the selected Com radio. The telephone party will not hear ATC communications, and vice versa.

In **CREW** mode, only the pilot and copilot are connected to the telephone. Passengers will not hear the telephone. The pilot and copilot will also have transmit capability on the other selected transceiver.

In **ISO** intercom mode, when the PMA8000B MP3 is in the **TEL** mode, the pilot position is in the "Phone Booth." Only the pilot will hear the telephone, and only he will be heard. He will also have access to Com 1 or 2, and will transmit on that radio using the PTT. All selected audio is provided to the pilot.



In cases where the cellular telephone doesn't provide sidetone, the audio panel can be configured, by holding the TEL and ADF buttons for more than one second, to create sidetone for you.

Split Mode

In the split mode, the pilot is on Com 1, while the copilot is able to transmit and receive independently on Com 2. Activating the split mode is straightforward — push both the Com 1 and Com 2 XMT (bottom) buttons at the same time. All four indicators will come on. Select one of the com XMT buttons to exit the split mode. It is not possible to have the pilot on Com 2 and copilot on Com 1 in split mode.

NOTE: Due to the nature of VHF communications signals, and the size constraints in general aviation aircraft, it is probable



that there will be some bleed-over in the Split mode, particularly on adjacent frequencies. PS Engineering makes no warranty about the suitability of Split Mode in all aircraft conditions.



Note: Split Mode does not turn off NAV, ADF, or AUX selected audio to pilot. However, the copilot will only hear the selected com receiver and unswitched inputs. The crew intercom is inhibited in Split Mode, but can be turned back on by pressing the Mute button.

Utility Jack

The 2.5 millimeter (3/32”) jack on the front of the PMA8000B MP3 has three distinct functions:

- Cell phone input
- Advisory audio input
- Music input

The use of this jack is controlled by three Smart Function Keys (SFK) controlled from the front panel. See Page 11—Smart Function Keys.



Cellular phone

When a cellular telephone is connected to this jack using a 2.5 mm to 2.5 mm adapter cord (PS Part Number 425-006-7026), the PMA8000B MP3 audio panel will connect the intercom to the cell phone when the “TEL” button is pressed (9). When the TEL mode is off, the telephone ringer audio will be heard if it is present on the telephone’s output (ringer may be muted by radio and intercom).

Audio Advisory Input

The front jack can be used as a priority advisory input for auxiliary systems such as a GPS terrain advisory or portable traffic watch system. To prevent radio or intercom from muting this input, press the “Mute” button.

NOTE

The front jack is no substitute for the certified installation of alerts such as the GPS waypoint or autopilot tones. These still must be hard wired into the back by your installer.

Smart Jack Function

When the PMA8000B MP3 has an *active* signal on music #1 input coming in from the rear connector, or the MP3 player is active, the front panel jack automatically becomes a Priority Advisory input, and is heard in the crew headphones.

This input will NOT be muted by radio or intercom, if the audio input is actively playing. Otherwise, the must should be deselected.

Music Input

When used as a music input, the front panel jack is treated as Music #1. However, thanks to the function controls, it can be distributed to all users, depending on the intercom mode.

Smart Function Keys (SFK)

With Virtual Tech Support, the configuration process is self-directed. Once you've set up your system, you don't need to change it again, unless you want to. Note: VTS annunciations will be stopped by any audio received on the com radio selected for transmit.

These functions are non-essential and non-required and as such are only an accessory capability. They don't affect the audio panel's primary function as a selector panel, aircraft intercom, or marker beacon receiver. You can't do anything with these buttons to prevent the PMA8000B MP3 from doing its main job.

Looking at the front panel you'll notice that the TEL, AUX, Mute and SPR buttons have "Function" assignments.

To use these function keys A, B, C – press and hold "Function" and



(Continued on page 15)

Quick reference PMA8000B MP3 Operation

This pull-out section covers advanced operation of the PMA8000B MP3.

Split Mode

The Split mode puts the pilot on COM 1, while the copilot can use COM 2 independently. To enter the split mode, press both the COM 1 and COM 2 XMT buttons at the same time. To exit, press the desired COM 1 or COM 2 XMT button.

When you activate the Split mode, the intercom is inhibited to avoid confusion with multiple conversations. To reactivate the intercom, press the Mute button.

Note: Split Mode does not turn off Nav, ADF, or Aux selected audio to pilot. However, the copilot will only hear the selected com receiver and unswitched inputs.

Telephone Operation

When the TEL button is active, the cellular telephone is added to the intercom loop, and who is connected to the phone depends on the intercom mode.

ISO – The pilot is alone on the telephone

All – Everybody is on the telephone.

Crew – Pilot and copilot on telephone, passengers are not.

Telephone	Pilot	Copilot	Passengers
ISO	☎		
ALL	☎	☎	☎
CRW	☎	☎	
☎ On phone			
■ Not connected			

Some cellular telephones do not provide sidetone (where you hear yourself speak). You can have the PMA8000B MP3 provide sidetone by pressing the TEL and ADF buttons for more than one second.

Music Muting

Music source #1 (front panel jack and Music 1 input) has four muting modes, which are announced in the headset as they are activated. These are: Radio Mute (aircraft radio mutes music), Intercom Mute (intercom conversation mutes music), Mute on (both radio and intercom mutes music), and Mute off (nothing interrupts music). Press the Mute button to cycle through the modes in sequence.

Music #2 has muting on or off, and is externally controlled.

Music in pilot isolate mode

Annunciation	LED	Intercom	Radio
“Mute on”	on	Muted	Muted
“Mute off”	off	♪	♪
“Radio mute”	off	♪	Muted
“Intercom	off	Muted	♪

The pilot can elect to listen to Music 1, even in the Pilot **Isolate** mode. While in the ISO mode, press and hold the **ICS** mode button, and press the **TEL** (function) button. The ICS indicator will blink every few seconds to indicate this mode is active.

Function Configuration

Functions A, B, and C give the PMA8000B MP3 some special capabilities.



Function A allows the passengers and crew to converse, in ALL intercom mode, without distracting the crew from radio duties. The passenger microphones are cut out from the crew when the radio is active, and the passengers never hear aircraft radios. Press TEL and AUX buttons to activate Function A, and you will hear “Alternate Intercom Function.” Press these buttons again to exit, and you will hear “Standard Intercom Function.”

Function B activates a **Monitor Mode**. In this case, the audio from

Function A		Function B		Function C		
Alternate Intercom Mode		Monitor Mode		Music Distribution		
State 1	State 2	State 1	State 2	State 1	State 2	State 3
Alternate intercom function	Standard Intercom Function	Monitor on	Monitor off	Standard music distribu-	Alternate music distribu-	Music 1 all headsets

the COM radio that is selected for transmit will mute the other COM audio when it is active. For example, if COM 1 is selected to transmit to ATC, but COM 2 is receiving weather information; the ATC will mute the audio from the weather while ATC is transmitting. In Monitor mode, the RCV COM indicator will blink every few seconds as a status indication. Monitor mode is set to off when the unit is turned off.

Function C controls music distribution, and has three states; **Standard Music Distribution**, **Alternate Music Distribution** and **Music 1 All Headsets**.

Music 1 (the MP3 player *or* the Music 1 input on the rear connector) can be distributed to all headsets regardless of intercom mode.

In *Standard Music Distribution*, Music 1 is provided to the crew, and Music 2 is independently provided to the passengers.

In *Alternate Music Distribution*, Music 1 is provided to everybody in the ALL intercom mode, and Music 2 becomes active, for the passengers only, when the intercom is in the CREW mode.

“Smart” Front Panel Jack

When music 1 is actively playing through the rear panel input, the front jack automatically becomes an advisory audio input, and is NOT muted by radio or intercom conversations. This is useful for connecting portable traffic or terrain alert devices. If the music 1 is NOT active, the Music mute should be deselected.

Recorder Playback

The internal recorder is always storing the audio from the radio selected for transmit. To playback the last incoming audio, hold the RCV button for 1 second, and release. Playback of most recent message will start. To hear an earlier message, hold the COM RCV button until playback stops again, and then press again to begin playing the

next earlier message. Repeat until you hear the message you wanted. Incoming new messages will stop playback, and you can then restart the message that was playing.

Note: all messages are erased when you switch the selected transmitter.

Blinking indicators

What is blinking?	How often	What it means
COM 1 or COM 2	Every 1 second	Pilot or copilot is transmit-
COM or COM 2	Every 3 seconds	Monitor mode activated
ICS mode	Every 3 seconds	Pilot has music in ISO
Mute and SPR buttons	Every 1 second	PA Mode active

This chart shows you what the blinking indicators mean:

MP3 Player:

MP3 ON/OFF: TEL + Nav 1

Random/Sequential TEL + Nav 2

Skip ahead TEL + MKR

Pause: TEL + ADF

Laptop transfer: Turn audio panel off. Push and hold AUX (transfer) while turning unit on, until the laptop recognizes the audio panel as an external drive.

USB Memory Device: Connect drive to audio panel with USB cables. Press and hold TEL + AUX until audio panel announces "Transferring." Release buttons, and listen to the percentage of the files are transferred, and then "Transfer complete" is announced.



(Continued from page 10)

then press the desired key, Function “A” “B” or “C”.

There are three special functions. Function Button “A” is related to the intercom function, and allows the crew to mute passengers’ intercom feed when radios are active.

Function Button “B” is used to activate a Monitor function that mutes the secondary communication radio audio when the primary radio (the one selected to transmission) is active.

Function “C” control how music is distributed in your airplane.

There are two music sources available to the PMA8000B MP3. Music 1 input can be either on the front jack, the MP3 player, OR the Music 1 input at the rear connector (Pins 23 and 24, J2). Music 2 is wired into the rear connector, only (Pins 26 and 27, J2)

The volume of the function selection annunciations and recorder playback can be adjusted through a hole on the top of the unit marked “ANN VOL.”

Function “A”

Function “A” controls the distribution of aircraft radio within the intercom, as well as passenger intercom muting. In the “standard intercom function” mode, aircraft radios are distributed to all, when the intercom is in the ALL mode. In CREW mode, only the pilot and copilot positions will hear aircraft radios.

When Function A is toggled into “Alternate Intercom Function,” the passengers will NOT hear aircraft radios, even in the **All** mode. In addition, when in the ALL mode, passengers will be able to converse with the crew. However, when the aircraft radio becomes active, the intercom audio from the passengers is muted, allowing the crew to focus on the radio. Passengers will be able to talk to each other.

Function “B”

Function “B” turns the Monitor Function on and off. When you press TEL and SPR, the audio will announce “Monitor on,” when activated, and “Monitor off” when deactivated.” In addition, the RCV LED will blink every few seconds.

When the Monitor is on, the audio from the Com that is selected for reception only (only top LED illuminated) will be muted when the radio that is selected to transmit becomes active.



This function is useful if you are copying weather from AWOS on Com 2, but have clearance delivery tuned in on Com 1. With the monitor active, the AWOS audio will be silenced when clearance delivery starts to speak.

NOTE: This mode is NOT remembered through power cycles, to prevent inadvertent blocking of desired audio on your next trip.

Function “C”

Function “C” has three modes. The first allows you to either send music 1 input to all intercom stations, all of the time, **or** have the normal rules apply to our music inputs.

When “*Music number one, all headsets*” is selected, music 1 (connected through the rear jack or the MP3 player) will be distributed to all headsets and is independent of the intercom mode switch. Therefore, even in the CREW mode, the passengers will hear Music 1, even though they will not hear the intercom or radios.

This mode allows you to use a single in-flight entertainment source aboard, and to send it everywhere, even in crew mode. The music muting will be normal, and follow the selected mode of the crew or passengers.

Function “C” also allows you to configure your music to be either *independent* of the intercom mode, or to make Music 2 *dependent* on the intercom mode.

When you press Function “C,” again, you’ll hear, “*Alternate Music distribution.*” In this case, Music 2 will be active *only* when the intercom is in the CREW mode, and only the passengers will hear it. It allows the passengers to have their music source come on only when they are not hearing the crew. If the passengers want to hear the music input through the front panel jack, the audio panel **MUST** be in *Alternate Music Distribution*, and the intercom must be in the ALL or ISO mode.

Press again, and you will hear “*Standard Music Distribution.*” In this mode, Music 2 becomes active, and will always be presented to the passengers on the intercom. Music 1 is only available to the pilot and copilot. The intercom mode switch doesn’t have any affect on the music distribution.

When the music is standard distribution, Music 1 will always go to the pilot and copilot positions, and is never heard by the passengers. Music 2 is always heard by the passengers, and never heard by the

pilot and copilot.

This mode is useful if your passengers have a different interest in entertainment or are watching a DVD, but do not want to be excluded from the intercom conversations.

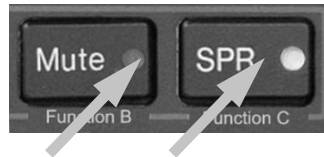
Public Address Function (if enabled)

To access PA function, press the **Mute** and **SPR** buttons simultaneously. The **Mute** and **SPR** LEDs will blink to indicate the audio panel is in PA mode. The copilot can continue to use the selected com radio while the pilot will now be heard over the speaker. To exit PA mode, push **Mute** and **SPR** again. PA mode is not remembered through power cycles.

Internal Recorder System

The Intercom Recording System is a digital recording system allowing automatic storage and playback of aircraft radio traffic.

Operating as a continuous loop recorder, (first message received will be the last heard), the recorder has 52 seconds of recording time, or up to 8 messages. With its own built in VOX circuit, there are no buttons to press to start recording. The system automatically begins to record the instant the radio becomes active. Only the com radio selected for transmit is recorded, and only the pilot and copilot will hear the playback audio. If the radio becomes active during playback, the playback will stop, and it will not record this communication.



Playback

Recording is automatic. To play back the last recorded message, press and hold the Com Receive pushbutton associated with the selected radio transmitter for about one (1) second. You can either wait for the message to finish playing before accessing the prior message, or cancel the playback. To cancel the playback, press and hold the playback button for two seconds. The next time the button is pressed for one (1) second, the next earlier message will be heard.

The playback will stop whenever there is more incoming selected com audio, and the message can be replayed from the beginning by pressing the Com receive button again.

A remote playback button may be installed.

Music Muting (6)

There are two SoftMute™ muting circuits. The front panel "Mute" button has four modes, and controls the Mute function for music 1.

The SoftMute™ circuit will cut the music out whenever there is conversation on the radio, the intercom, or both, depending on the "Mute" mode selected. When that conversation stops, the music returns to the previous level comfortably, over a second or so.

The mute mode functions are controlled through sequential pushes of the Mute button, and include annunciations of the mode selected.

Mode 1 - music **will** mute with *either* intercom *or* radio - MUTE button is lit. Voice annunciation is "mute on."

Mode 2 - "Karaoke" mode - music will not mute except during transmissions.- MUTE LED is OFF. Annunciation is "mute off."

Mode 3 - *Radio* will mute music, but intercom will **not** mute music - MUTE LED is OFF. Annunciation is "radio mute."

Mode 4 - Radio will **not** mute music, intercom *will* mute music - MUTE LED is OFF. Annunciation is "intercom mute."

The passenger's intercom also has a SoftMute™ circuit. If the passengers hear the radio, or talk on the intercom, the music will mute. If the audio panel is in CREW mode, then the radio reception will not affect the passenger music.



Passengers also have a Karaoke Mode. If the passengers are listening to the music 1 input or front panel input, their Karaoke Mode is controlled by the front panel "Mute" button. If the passengers are listening to the music 2 input, their Karaoke Mode is activated by an external switch installed either in the panel, or connected to the AUX button logic output pin on the PMA8000B MP3.

Music Controls

Above the top row of buttons are icons that relate to the MP3 player operation. Below the Shift/Function legends, you'll see a row of blue legends that refer to MP3 files and volume controls.

To activate these controls, you hold the "Shift Key/Hold Function," and press the desired button.

Music 1 & MP3 Volume

The Music 1 and the MP3 volume PMA8000B MP3 can be adjusted from the front panel, if desired, by pressing the combinations of keys listed.

Press **Hold Function** (TEL) and **Vol UP** (SPR) for more than one second to increase music 1 or MP3 volume. The volume will increase the volume three steps per second.

Press **Hold Function** (TEL) and **Vol Down** (MUTE) for more than one second to decrease music 1 or MP3 volume. The volume will decrease the volume three steps per second.

It will take about 12 seconds to go from minimum to maximum volume.



MP3 Player Operation

Turn MP3 on and off- Press **Shift Key** (TEL) and **MP3-ON/OFF** (NAV1). Audio annunciation will be "MP3 power on" or "MP3 power off." The audio panel will always turn on with the MP3 player turned off.

To toggle **sequential** and **random** play mode, Press Shift Key (TEL) and press Nav 2. The audio annunciation will be "MP3 random," or "MP3 sequential"

To **skip** to the next song, press Shift Key (TEL) and MKR.

To **pause** MP3 play, press Shift Key (TEL) and ADF.

File Transfer

The PMA8000B MP3 has 1 GB of internal storage. The program inside the unit will recognize and upload any compatible audio files (.wav, .mp3, unprotected .wma) from an external source, through the USB cable. The PMA8000B MP3 is not compatible with iTunes formats.

Laptop transfer

Due to the transfer rate advantages, we recommend that you transfer files from a laptop to the PMA8000B MP3 if possible. Direct USB device transfer requires 35-40 minutes to transfer 1GB of songs; Laptops typically require 4-9 minutes for the same amount of data with USB 2 port.

PS Engineering recommends Microsoft XP operating system or later.

1. Using the supplied 2.5 mm-to-USB cable, along with the supplied USB-to-USB adapter cord (PS Part number 425-003-1454), connect this set of cables from the PMA8000B MP3 front panel jack to a PC USB port.
2. With the audio panel turned off, push and hold the "Transfer" (AUX) while powering the PMA8000B MP3 on. Hold the button until the laptop recognizes the unit as an external drive, and opens a dialog box.
3. When windows recognizes the PMA8000B MP3 as a removable drive, select "Open folder to view files using Windows Explorer"
4. Create a subfolder (name it whatever you wish, like "PlaneMusic") on your audio panel to contain the specific music files you will want on the airplane.
5. Copy the desired music into this folder.
6. After transfer is complete, turn the audio panel off to return to normal operation.

Transfer using USB Drive

For best results, the following procedure should be used for a USB device when used with the PMA8000B MP3. The USB drive should be

Music File Notes:

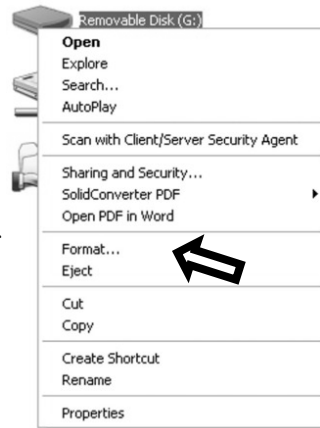
1. PS Engineering recommends using only first quality USB Flash drives, for consistent file transfer results.
2. The PMA8000B MP3 unit ONLY supports MP3 files (.mp3), Windows Media Files (unprotected .wma) and Wave (.wav) files. It does not support iTunes file formats.
3. Different types of files, and different music file programs may result in variation in the volume level of the stored music.

For more tips on MP3 files, visit www.ps-engineering.com

reformatted before being used with the PMA8000B MP3 and only music files should be stored, in a single subfolder on the USB Device.

1. Connect the USB Drive to your PC
2. From “Start” select “My Computer” and select the external drive.
3. Right Click on the device, and select “Format. . .”
4. Select “FAT” as File system, and “Start” **WARNING, this will erase all files on this device.**
5. After formatting is complete, right click in the drive, and select “New. . . Folder” and create a new folder for your music that you will put on your PMA8000B MP3
6. Transfer your music files into the new music folder.

We recommend having no more than 1GB of music files in this folder to ensure that all the desired songs are played on the PMA8000B MP3. Because of the Microsoft file protocol, we cannot predict which files will be omitted.

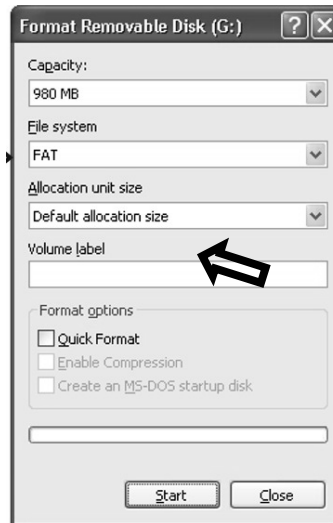


Upload to Audio Panel

To upload from a USB memory device, connect the supplied 2.5 mm plug/USB adapter cable (p/n 425-921-3983) to the audio panel and your USB device.

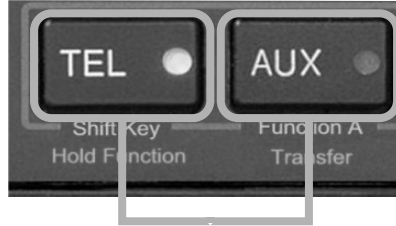
Press and hold the **Hold Function** (TEL) and **Transfer** (AUX) buttons until that unit announces “Transferring.” The annunciation will also give status reports approximately as each 20% of the data is transferred, for transfers lasting more than one minute..

After the music transfer is complete, the PMA8000B MP3 will automatically reset to store the files and create the new play list. Therefore it is not advisable to upload files in flight or when the audio panel is otherwise in use.





The maximum transfer rate will decrease by about 1% each time the unit is uploaded, therefore frequent music upload is not advised.



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. If the unit is being installed by a non-certified individual in an experimental aircraft, a factory-made intercom harness must be used for the warranty to be valid.

PS Engineering, Inc. warrants this product to be free from defect in material and workmanship for a period of **three (3) years** from the date of sale. During the first **twelve (12) months** of the three-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 **twenty-four (24) 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
(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.



PMA8000B MP3 Serial Number _____

Installed by _____

Installation Date _____

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