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PMA8000C

Audio Selector Panel
Marker Beacon Receiver
Stereo Intercom System
with Bluetooth™ Connectivity

Pilot's Guide
and
Operation Manual

202-890-0303   **✸ Bluetooth™**   Rev. 1, March 2012

For units serial number CC1026 and above

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FAA-Approved: TSO C50c, C35d
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Flying never sounded so good ®

This pilots guide provides operating instructions for the PMA8000C Audio Panel. Please read it carefully before using the equipment so that you can take full advantage of its capabilities.

This guide is divided into operating sections such as Transceiver Selection, Audio Selector, Intercom, and Marker Beacon Receiver, and special functions. The center section provides a handy reference that you can remove.
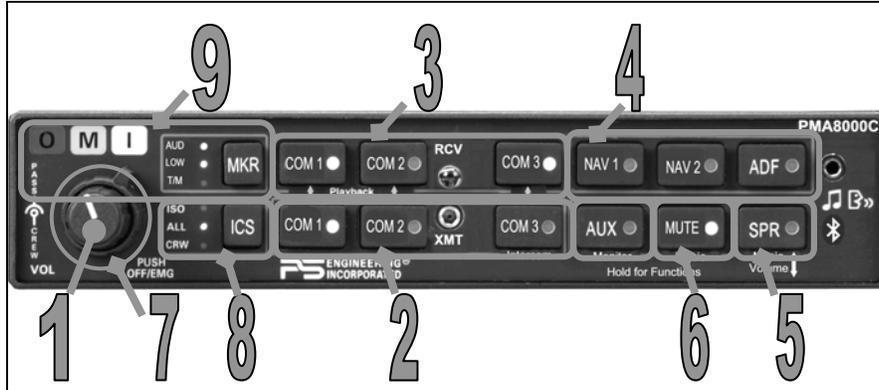
PMA8000C controls

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

The power switch controls all audio selector panel functions, intercom and marker beacon receiver.

When the unit is turned off, either by pressing the volume control, *or* if the breaker is pulled removing power, the PMA8000C 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)

To select COM 1 COM 2 or COM 3 for transmit, press the button on the bottom row, next to the XMT legend. The bottom and top button indicators light, showing that you will transmit **and** receive on the selected radio.

Communications Receive (RCV) Selection (3)

To listen to the other radio, press the upper button, in the RCV (receive) section. When a com is selected for receive, it will stay selected until manually deselected, even if you select, and then deselect its transmitter.

Unless the audio panel is in "split" mode, the PMA8000C gives priority to the pilot's radio Push-To-Talk (PTT).

If the **Monitor** function is activated (**Monitor**), the audio from this radio will be muted when the primary radio (selected for transmit) is receiving a signal.

In cell phone mode, the pilot is connected to the cell phone, but still hears the COM radios selected. The radio PTT will switch the mic to the selected com, and allow continued aircraft communications to continue. (See Page 6—Cellular telephone—for more details)

Audio Selector (4)

These buttons select the switched navigation receivers. The DME input (if present) is also shared with **AUX**. In SPLIT mode, only the pilot will hear selected navigation audio.

Cockpit Speaker (5)

This switch will place all selected audio on the cockpit speaker when this switch is selected. In "Split" mode, the speaker carries the same audio as the pilot.

Depending on installation, important audio alerts such as radar altimeter or autopilot disconnect will come over the speaker even if it is not selected, while other unswitched inputs, 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 processors, each microphone is monitored, and opens instantly when human speech is detected. This results in seamless conversations aboard the airplane for crew and passengers, without syllable clipping or fatigue-inducing noise.

No adjustment of the *IntelliVox®* squelch control is necessary. There is no field adjustment. 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, www.oregonaero.com). This will not only optimize VOX performance, but will improve the overall clarity of all your communications.

You should also keep the microphone out of a direct wind. Moving your head through an 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 area, 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.

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 PMA8000C 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 intercom has three 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.
This button cycles through the intercom modes, from top to bottom and then back up.

Iso: The pilot is isolated from the intercom and is connected only to the aircraft radio system. He hears the radios (and sidetone during radio transmissions). 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.

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 COM 3 button, 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 be the selected mode.

ALL: All parties will hear the aircraft radio and intercom. Crew will hear Music 1, passengers can hear Music 1 or 2. The music mutes in accordance with the muting mode selected.

CRW: (Crew) Pilot and copilot are connected on one intercom channel and have exclusive access to the aircraft radios. The passengers have their own intercom. The music that the crew and passengers will hear is determined by the Smart Function Keys.

Marker Beacon Operation (9)

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

The Blue, **O**uter Marker lamp has an associated 400-Hertz Morse '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.

The Amber, **M**iddle Marker lamp is coupled with a 1300 Hertz tone, keyed alternately with short 'dot' and long 'dash' bursts at 95 combinations per minute.

The White, **I**nner marker lamp has a 3000 Hertz 'dot' tone, and will be keyed at a rate of six times per second.

Marker Beacon Receiver audio can be added to the selected audio pushing the "**MKR** switch momentarily and noting the **AUD** indicator lights. There is a service adjustment located on the top of the unit to adjust the marker receiver volume if desired.

The **MKR** button is also used to test the indicator lamps and mute the marker audio. Pressing the **MKR** button for one second will cause the marker audio to mute. The next beacon received will re-activate the audio.

Holding the **MKR** button for one second also activates marker test, labeled "**T/M**" and illuminates all three lamps simultaneously to confirm the lamps (internal and external) are working. Releasing the button returns to the last sensitivity.

The marker can be set for high sensitivity with an external switch. In the High sensitivity mode, the **LOW** indicator will extinguish.

Split Mode

The split mode can be activated at any time by pressing the **COM 1** *and* **COM 2 OR COM 3 XMT** buttons at the same time. This places the pilot on COM 1 and the Copilot on COM 2 or COM 3. If COM 2 and COM 3 XMT buttons are

pushed, the pilot will be on COM 2, and the Copilot will be on COM 3.

Pilot on COM 2 or COM 3, and Copilot on COM 1 is not possible.

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.

Bluetooth ® Telephone

The Bluetooth telephone mode serves as a full duplex interface and distribution for portable cellular phones Bluetooth connectivity. Calls can be made and answered from the telephone only. The telephone connects 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.

In **ISO** intercom mode, only the pilot will hear the telephone, and only he will be heard. He will also have access to COM 1, 2 or 3, and will transmit on that radio using the PTT. Selected radio 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 COM 3 and ADF buttons for more than one second, to create sidetone for you.

Stuck Microphone Protection

The PMA8000C will sense if the pilot or copilot radio PTT remains keyed for more than 32 seconds. When a stuck mic is detected, the key input is ignored, and the other crewmember can transmit normally. If the stuck becomes ungrounded, normal operation is restored.

Utility Jack

The 2.5 millimeter (3/32") jack on the front of the PMA8000C serves two functions, and advisory audio input and Music input (wired).

Audio Advisory Input

The front jack can be used as a priority advisory input for auxiliary systems

Quick reference PMA8000C Operation

This pull-out section covers advanced operation of the PMA8000C.

Bluetooth Connection

1. Turn on the PMA8000C.
2. From your Bluetooth enabled device, search for other devices, and select the PMA8000C.
3. If an access code is required, enter "0000" to connect to the PMA8000C, unless this is changed (see FAQ #2)

You can now make and receive calls with the audio directed through the audio panel, and stream music to Music input 1.

The Bluetooth module can be turned off, of desired, by pushing the AUX and ADF buttons while the unit is being turned on. The module will reset when unit power is cycled.

Bluetooth® FAQ

1. Some Bluetooth terms to know:

   Hands Free — audio panel acts as a hands free telephone handset
   A/V Controller — the audio panel has some control over the music streaming device (see FAQ #7).
   Stereo headset — the audio panel will receive music audio streaming from the PMA8000C.
   Pairing — is when two Bluetooth devices establish communication and "agree" to connect. This occurs the first time the devices "meet" and they will store the information to reconnect easily in the future.
   Discoverable — the PMA8000C is always "discoverable." That means it will allow any Bluetooth device within range to detect its presence and attempt to pair. Pairing will only occur when both devices agree, so you will have to accept the pairing on your device.
   Connection — this occurs when Bluetooth devices that have been previously paired see each other again and reestablish their communication. This can happen automatically, or by prompting the user to accept the connection again. The PMA8000C will always look for paired devices when it is turned on, and connect with the first one that allows connection.

2. What access code do I use?

  a. If your phone requires an access code to complete the pairing, you can use 0000 (all zeros). See the table if you wish to change the audio panels access code to "1234," or "1111".

3. How many devices can I pair with the audio panel?
  a. You can pair up to eight devices. After that, the audio panel will "forget" one device when another is added. Due to the nature Bluetooth, we can't predict which device will be dropped. If your desired device is dropped, simply re-pair the one you want.

4. How many devices can I use at the same time?
  a. You can connect multiple devices such as a Smartphone and an iPad for music, but only one *telephone* can be connected to the

Hold button on power up	Pairing Code
COM 3	0000 (default)
NAV 1	1234
NAV 2	1111

  audio panel at a time.

5. Can I use a different music source other than my phone?

  a. Yes, you can. However the music device, must be paired and connected <u>first</u>, **before** the telephone is turned on. In Smart-phone such as Motorola Droid, you should specifically disable the Bluetooth phone or music portion, depending on function to be used. Note, if an iPhone is connected second, you may not be able to stop it from taking over the music. Some phones must manually select the PMA8000C as an audio source for the phone after the music is connected.

6. My Smartphone didn't reconnect, what do I do?

  a. It is most likely that the PMA8000C dropped the pairing either because of added pair that exceeded the limit, or because of some corruption in the stored information. Simply un-pair by deleting the PMA8000C in your Bluetooth phone, and re-pairing with the audio panel. This is often true if you leave the Bluetooth range, and return while the audio panel is still on.

7. Can I play my laptop movie audio?

a. If your laptop is **compatible as Bluetooth A/V source (not all are)**, yes. Just add the PMA8000C as a Bluetooth device as you would a stereo speaker device. There are also Bluetooth devices available (such as the Sony TMR-BT10A Bluetooth Transmitter Adapter) to plug into the audio output jack that will enable you to stream music to the audio panel. **Note: laptop computers with spinning hard drives may fail to work abut 7,500', due to a loss of air pressure on the disc mechanism**.

8. Can the Bluetooth be played through Music 2?

a. No. However, you can engage Music Function, "*Music 1, all headsets.*"

9. My music quality is very poor, and can only be heard in telephone mode, what's wrong?

a. Check your Smartphone, and be sure that it is paired with the PMA8000C as a "speaker" or "wireless speaker" in A2DP mode.

Split Mode

The Split mode puts the pilot on COM 1, while the copilot can use COM 2 or COM 3 independently. Or, the pilot can use COM 2, and the copilot COM 3. To enter the split mode, press both the desired COM XMT buttons at the same time. To exit, press the desired COM 1 or COM 2 XMT button.
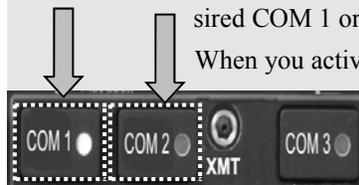
When you activate the Split mode, the intercom is inhibited to avoid confusion with multiple conversations. To reactivate the intercom, press the Mute button.

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 Bluetooth telephone connection is active, the cellular telephone is added to the intercom loop, and who is connected to the phone depends on the intercom mode.
Calls are placed or answered from the telephone handset.

Some cellular telephones do not provide sidetone (where you hear yourself speak). You can have the PMA8000C provide sidetone by holding both the **COM 3** and **ADF** buttons at the same time, 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 inter-

Telephone	Pilot	Copilot	Passengers
ISO	☽		
ALL	☽	☽	☽
CRW	☽	☽	
☽ On phone			
Not connected			

com mutes music), and Mute off (nothing interrupts music). Press the Mute button to cycle through the modes in sequence.

Music #2 has muting either on, or off, and is controlled by holding the MUTE and AUX buttons for more than one second.

Music in pilot isolate mode

The pilot can elect to listen to Music 1, even in the Pilot **Iso**late mode. While already in the ISO mode, press and hold the **ISO** button until the in-

Annunciation	LED	Intercom	Radio
"Mute on"	on	Muted	Muted
"Mute off"	off	♫	♫
"Radio mute"	off	♫	Muted
"Intercom mute"	off	Muted	♫

dicator blinks. The ICS indicator will then blink every few seconds to indicate this mode is active. Music muting will follow the modes listed above.

Smart Function Keys (SFK) Configuration

These secondary functions give the PMA8000C some special capabilities.

✂

"Intercom" 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 ac-

tive, and the passengers never hear aircraft radios. Press and hold the COM 3 button until the audio annunciation starts (about 1 second) to activate the function, and you will hear "Alternate Intercom Function." Hold the button again to exit, and you will hear "Standard Intercom Function."

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

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

Music 1 (the Bluetooth device *or* the Music 1 input on the rear connector) can be distributed to all headsets depending on 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. The front panel

"Intercom" COM 3		"Monitor" AUX		"Music" Mute		
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 distribution	Alternate music distribution"	Music 1 all headsets

	Standard Music Distribution			Alternate Music Distribution			Music 1 All Headsets		
	All	Crew	ISO	All	Crew	ISO	All	Crew	ISO
Front Panel Jack	Crew	Crew	Copilot*	Crew & Pass	Crew	Copilot* & Pass	Crew	Crew	Copilot*
Music 1 Input	Crew	Crew	Copilot*	Crew & Pass.	Crew	Copilot* & Pass.	Crew & Pass.	Crew & Pass.	Copilot*& Pass.
Music 2 Input	Pass.	Pass.	Pass.		Pass.				
*Pilot has Music 1 option in ISO mode									

jack is also available to the passengers in the ISO and ALL intercom modes.

The PMA8000C will announce the Alternate Intercom and Music distribution functions at unit power up. To *defeat* the announcement at power up, hold the **COM 3** and **AUX** buttons for about two seconds. The feature can be enabled using the same sequence.

NOTE: Function Keys are not available in the split 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 Music 1 is not active, the mute mode should be deselected.

Recorder Playback

The internal recorder is always storing the audio from the radio selected for transmit. To play back the last incoming audio, hold the RCV (top) button on the radio selected to transmit for one second, and release. The playback will start. Playback stops if the radio becomes active, but the new incoming message will not be recorded. When the radio stops, press play and you will be in the same message you had playing.

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.

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A remote playback switch may also be installed.
Note: when you switch from one transmitter to another, the recordings are lost.

Blinking indicators

This chart shows you what the blinking LEDs mean.

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

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NOTES:

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 PMA8000C has an audio signal on music #1 from the rear connector, the front panel jack automatically becomes a Priority Advisory input, and is heard in the crew headphones, and this input will NOT be muted by radio or intercom., if the Music 1 audio is actively playing.

Music Input

When used as a music input, the front panel jack (and Bluetooth) music are treated as Music #1. Using the Music function button, it can be distributed to all users, depending on the intercom mode.

Smart Function Keys (SFK)

With voice feedback, the configuration process is self-directed. These functions are non-essential and non-required and as such are only an accessory capability. Note: annunciations will be stopped by any audio received on the com radio selected for transmit.

Looking at the front panel you'll notice that the COM 3, AUX, MUTE and SPR buttons have "Function" assignments.

To use these function keys **Intercom**, **Monitor**, and **Music** – press and hold the desired function key until the audio annunciation of the mode begins. NOTE: Snart Functions are not available in the split mode.

There are three special functions. "**Intercom**" function is related to the intercom audio distribution, and allows the crew to mute passengers' intercom feed when radios are active.

The "**Monitor**" function mutes the secondary communication radio audio when the primary radio (the one selected to transmission) is active.

"**Music**" function controls how music is distributed in your airplane.

There are two music sources available to the PMA8000C, in addition to the

Bluetooth stream. Music 1 input can be either on the front jack, 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."

"Intercom" Function

Function **Intercom** controls the distribution of aircraft radio and passenger intercom. 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 in "*Alternate Intercom Function*," the passengers will NEVER hear aircraft radios, even in the **ALL** mode. In addition, when in the ALL intercom mode, passengers will be able to converse with the crew, unless the aircraft radio becomes active, when the intercom audio from the passengers to the pilot and copilot is stopped, so the crew can focus on the radio. Passengers will always be able to talk to each other.

To activate this function hold the **COM 3 XMT** button until the audio announces "*Alternate Intercom Function*," when activated, and "*Standard Intercom Function*" when deactivated." The alternate intercom mode is announced at power up, unless the power on announcement has been defeated.

"Monitor" Function

This function turns the **Monitor** mode on and off.

When the Monitor mode 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.

To activate the **Monitor** Function press and hold **AUX**. The audio will announce "Monitor on," when activated, and "Monitor off" when deactivated

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

"Music" Distribution Function

The **Music** Function has three modes. To cycle Music distribution modes, press and hold **Mute** button until the annunciation starts. When "*Music number one, all headsets*" is selected, Music 1 (Bluetooth source, or rear connector) will be distributed to all headsets and is

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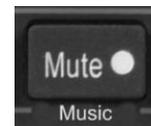
independent of the intercom mode switch. Therefore, even in the CREW mode, the passengers will hear Music 1, although though they will not hear the crew intercom or radios.

This mode allows you to use a single in-flight entertainment source. The music muting follow the selected mode of the crew and passengers.

When you press "**Music**" function again, you'll hear, "*Alternate music distribution.*" This function makes Music 2 *dependent* on the intercom mode.

In this state, Music 2 will be heard *only* when the intercom is in the CREW mode, and only the passengers will hear it. Music 1 (Bluetooth, Rear input, and Front Panel Jack) will be provided to passengers' headset in ISO and ALL intercom modes.

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

When the music is in "*Standard music distribution,*" Music 1 will <u>always</u> go to the pilot and copilot positions, and is <u>never</u> 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.

Alternate Music distribution modes are announced at power up, unless the power on announcement has been defeated.

Power on announcement

If the **Intercom** or **Music Distribution** is changed from the factory default, the configuration will be played when the unit is powered up. To defeat this announcement, hold the COM 3 and AUX buttons for two seconds. The feature can be enabled using the same sequence.

Music Muting

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 voice annunciations of the mode selected.

- **Mute On** - music <u>will</u> mute with *either* intercom *or* radio - MUTE button is LED lit. Voice annunciation is "Mute on."
- **Radio Mute** - *Radio* <u>will</u> mute music, but intercom will **not** mute music - MUTE LED is OFF. Annunciation is "Radio mute."
- **Intercom Mute** - Radio will **not** mute music, intercom <u>will</u> mute mu-

sic - MUTE LED is OFF. Annunciation is "Intercom mute."

- **Mute Off** - The "Karaoke" mode - music will **not mute** except during radio transmissions.- MUTE button LED is OFF. Annunciation is "*Mute off.*"

When the PMA8000C is turned on, it always begins in "**Mute on**" mode.

The passengers' 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.

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 holding the AUX and MUTE buttons for more than one second.

Music 1 Volume

The music level is set at the factory at a comfortable level. We recommend adjusting the entertainment volume at the sources. However, the Music 1 volume can be adjusted from the front panel, if desired, by pressing **SPR** button.

NOTE: *Increasing this music level can increase the amount of aircraft electrical system noise as well.*

The Music 1 volume can be adjusted from the front panel, if desired, by pressing and holding the Music Volume (SPR) key.

Press the **Music Volume (SPR)** for more than one second, a tone will be heard indicating the volume level is changing and the music volume will begin to change. The volume will either increase or decrease, depending on the last action. To reverse the volume change, release the **Music Volume** (**SPR**) button, and press and hold again, and the volume will change. Continue to hold until the desired level is reached.

Note: Since it is possible to turn the volume completely off, you may need to turn the volume up if you don't hear music when you expected to.

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

Swap Mode (Switch from COM 1 to COM 2 or COM 3 remotely)

The "swap" button allows you to switch between the COM transmitters without having to reach up to the audio panel, and is a handy way to switch to Ground Control when exiting the runway. This optional switch is usually mounted on the control yoke or a convenient place by the pilot position. COM 3 can be included in the SWAP rotation if desired. Hold the external swap button and the COM 3 XMT at the same time to add or remove COM 3 from the Swap function.

Internal Recorder System

The Internal Recording System is a continuous loop recorder, (last message received will be the first heard), the recorder has 45 seconds of recording time, or up to eight messages. There are no buttons to press to start recording. The system automatically begins to record the instant the radio selected for transmit becomes active. Only the pilot and copilot will hear the playback audio.

To play back the last recorded message, you press and hold the COM RCV pushbutton associated with the selected radio transmitter for about one second. You must wait for the message to stop playing before accessing the prior message. To cancel the playback, press and hold the playback button for two seconds. The next time the button is pressed for one second, the next earlier message will be heard. If the radio becomes active while a message is playing, the message playback will stop. The new audio will not be stored. Press play to restart the message you were playing.

Messages are lost when a different radio is selected for transmit.

The playback will stop whenever there is more incoming selected com audio, and the message can be replayed from the beginning. **Note:** an external playback button may also be installed in a convenient location.

Public Address Function (if enabled)

To enter PA mode, press both the **Mute** and **SPR** buttons at the same time. 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 while the pilot will be heard over the speaker. To exit push **Mute** and **SPR** again. This mode is also reset when power is cycled.

Backlighting

The white text backlighting is controlled by the aircraft dimmer, while the green indication LEDs are automatically controlled by the light sensor on the PMA8000C.

PS ENGINEERING® INCORPORATED

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 <u>date of retail sale by authorized PS Engineering dealer</u>. During the first **twelve (12) months** of the three-year warranty period, PS Engineering, Inc., at its option, <u>will send a replacement unit</u> 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.

<u>All transportation charges for returning the defective units are the responsibility of the purchaser</u>. 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 dissemble 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.