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PMA8000BT

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

Pilot's Guide
and
Operation Manual

202-890-0702

Bluetooth™

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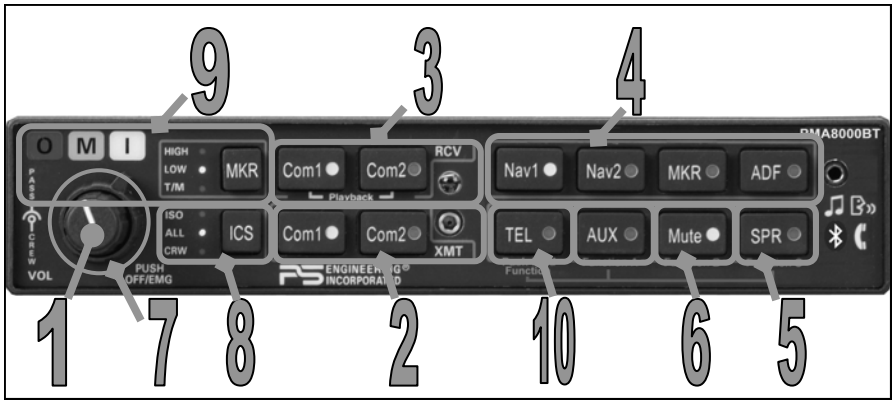
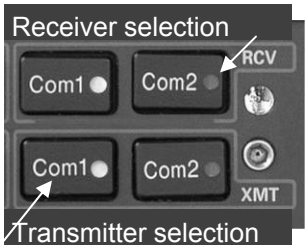
This pilots guide provides operating instructions for the PMA8000BT Audio Panel. Please read it carefully before using the equipment so that you can take full advantage of its capabilities.
This guide is divided into operating sections such as Transceiver Selection, Audio Selector, Intercom, and Marker Beacon Receiver, and special functions. The center section provides a handy reference that you can remove.



PMA8000BT 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 PMA8000BT 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 or Com 2 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 (4)

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 PMA8000BT gives priority to the pilot's radio Push-To-Talk (PTT).
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.

In TEL 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—TEL—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 PMA8000BT 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 TEL 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 '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 heard by selecting the "**MKR**" push-button switch. There is a service adjustment located on the top of the unit to adjust the volume if desired.

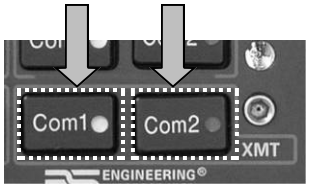
The **MKR** button located next to the indicator lights is used to set the receiver sensitivity and to test the indicator lamps mute the marker audio.

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.

Split Mode

To activate the split mode, push both the COM 1 and COM 2 XMT (bottom) buttons at the same time. All four indicators will come on. In the split mode, the pilot is on COM 1, while the copilot is on COM 2.



Select either 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.

Telephone (TEL) (10)

The TEL mode serves as a full duplex interface and distribution for telephone systems such as portable cellular phones with earpiece jacks or Bluetooth connectivity. Pressing the 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.

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 or 2, 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 TEL and ADF buttons for more than one second, to create sidetone for you.

Utility Jack

The 2.5 millimeter (3/32") jack on the front of the PMA8000BT has three distinct functions:

- Cell phone input (wired)
- Advisory audio input
- Music input (wired)

Cellular phone

When a cellular telephone is connected to this jack using an adapter cord (PS Part Number 425-006-7026), the PMA8000BT 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).

(Continued on page 15)

Quick reference PMA8000BT Operation

This pull-out section covers advanced operation of the PMA8000BT.

Bluetooth Connection

1. Turn on the PMA8000BT.
2. From your Bluetooth enabled device, search for other devices, and select the PMA8000BT.
3. If an access code is required, enter "0000" to connect to the PMA8000BT, 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.
In addition, you can control music from some compatible devices. See FAQ#7

Play/Pause, Skip Back, Skip Forward

Note: Not all entertainment control functions are supported by all devices. Visit www.ps-engineering.com for up-to-date information

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 PMA8000BT.
   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 PMA8000BT 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 PMA8000BT 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

Hold button on power up	Pairing Code
Nav 1	0000 (default)
Nav 2	1234
MKR	1111

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 of the internal Bluetooth file structure, we can’t predict which device will be dropped. If your desired device is dropped, simply re-pair the one you want.

Mode	Hold buttons at power-on
SimpleBlue	Nav 1 and Nav 2
SuperBlue	Nav 1 & MKR

4. What is the difference between the SimpleBlue™ and Super-Blue™?

a. SimpleBlue™ is the most basic functionality. The PMA8000BT can be paired and connected to one device, like a Smartphone, for telephone and music streaming. This is the default mode as shipped by PS Engineering, and is best if the airplane has a single user, or one user at a time (a shared air-

plane, for instance).
SuperBlue™ allows multiple users and multiple devices to be used at the same time, with sub-routines and sequencing of connections needed to get the desired results. This is recommended for experienced Bluetooth users with multiple connection requirements.

5. How many devices can I use at the same time?
   a. In SimpleBlue™ mode, you can connect just one device. In the SuperBlue™ mode, you can connect multiple devices, but only one telephone can be connected to the audio panel at a time.

6. Can I use a different music source other than my phone?
   a. Yes, you can. However, the audio panel must be in the SuperBlue mode, and the music device, such as a iPad or other music device must be paired and connected first, **before** the telephone is turned on. This device should not be a Smartphone, unless you can specifically disable the Bluetooth phone portion (such as Motorola Droid).

7. What functions are available for music control?
   a. Every Bluetooth device has a little different capability. The table below shows functions we have determined through personal testing. Please understand that these devices can change, and even if a function has or has not worked in the past, dynamic software upgrades can change the way your device behaves without notice, and beyond our control. You can visit www.ps-engineering/support for up to date information.
   To use these features, hold the Function (**TEL**) button and push the Play/Pause (**Nav 1**), Skip Forward (**NAV 2**) or skip Backward (**MKR**) button

Device	Play 	Pause 	Skip Forward 	Skip Back 
TEL+	Nav 1	Nav 1	Nav 2	MKR
Blackberry	Yes	Yes	Yes	Yes
iPhone	Yes	Yes	No	No
LG nV3	No	No	No	No
Droid	Yes	Yes	Yes	Yes

8. What functions are available for phone features?

   a. Every Bluetooth telephone has a little different capability. The table below shows functions we have enabled for compatible phones. The speed dial will activate the numbers **stored in the location in a phone**, and not in the PMA8000BT. Please understand that these devices can change. You can visit www.ps-engineering/support for up to date information.
   To activate the telephone functions press and release **TEL** button. Then press the button listed for more than one second, until the telephone responds.

Button press	Result
Nav 1	Speed dial 1(often this is voice mail)
Nav 2	Speed dial 2
MKR	Last number dialed

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

   a. It is most likely that the PMA8000BT 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 PMA8000BT 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.

11. Can I play my laptop movie audio?

   a. If your laptop is **compatible as A/V source (not all are)**, yes. Just add the PMA8000BT 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**.

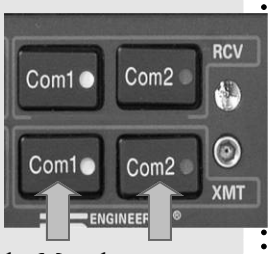
12. Can the Bluetooth be played through Music 2?

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

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

a. Check your Smartphone, and be sure that it is paired with the PMA8000BT 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 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.
You can answer a call by pushing the TEL button while it is ringing. Calls can be answered from the telephone handset or the audio panel. You can disconnect from either the handset or the audio panel. When a call is disconnected or dropped, the TEL button indicator will extinguish after a few moments.

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 PMA8000BT provide sidetone by holding both the **TEL** 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 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.

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

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 **TEL** (function) button, and press the **ICS** button. The ICS indicator will blink every few seconds to indicate this mode is active.

Function Configuration

Functions A, B, and C give the PMA8000BT 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 ac-

Function A AUX		Function B MUTE		Function C SPR		
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

tive, 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 the COM radio that is selected for transmit will mute the other COM audio when it is active. Fro 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 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.

	Standard Music Distribution			Alternate Music Distribution			Music 1 All Headsets		
	All	Crew	ISO	All	Crew	ISO	All	Crew	ISO
Front Panel Jack	Crew	Crew	Copi-lot*	Crew & Pass	Crew	Copi-lot* & Pass	Crew	Crew	Copi-lot*
Music 1 Input	Crew	Crew	Copi-lot*	Crew & Pass.	Crew	Copi-lot* & Pass.	Crew & Pass.	Crew & Pass.	Copi-lot*& Pass.
Music 2 Input	Pass.	Pass.	Pass.		Pass.				

*Pilot has Music 1 option in ISO mode

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

"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.

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
ICS mode	Every 3 seconds	Pilot has music in ISO
Mute and SPR buttons	Every 1 second	PA Mode active

(Continued from page 6)

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 PMA8000BT 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 Smart Function Keys, 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. Once you've set up your system, you don't need to change it again, unless you want to. 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 TEL, AUX, Mute and SPR buttons have "Function" assignments.

To use these function keys A, B, C – press and hold "Push-Hold Function" and then press the desired function key, "A" "B" or "C" and release both.

There are three special functions. Function "A" is related to the intercom function, and allows the crew to mute passengers' intercom feed when radios are active.
Function "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" controls how music is distributed in your airplane.
There are two music sources available to the PMA8000BT, 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."

Function "A"

Function "A" 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 Function A is in "Alternate Intercom Function," the passengers will NEVER hear aircraft radios, even in the **ALL** mode. In addition, when in the ALL 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 Function "A", hold the **TEL** button and then press **AUX**. the audio will announce "Alternate Intercom Function," when activated, and "Standard Intercom Function" when deactivated."

Function "B"

Function "B" turns the Monitor Function on and off.
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 the next trip.
To activate Function "B," press **TEL** and **Mute**. The audio will announce "Monitor on," when activated, and "Monitor off" when deactivated

Function "C"

Function "C" has three modes. To cycle Function "C" modes, press **TEL** and **SPR**.
When "*Music number one, all headsets*" is selected, Music 1 (Bluetooth source, or rear connector) 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 crew intercom or radios.
This mode allows you to use a single in-flight entertainment source. 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. 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 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.

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.

- Mode 1 - music will mute with *either* intercom *or* radio - MUTE button is LED lit. Voice annunciation is "mute on."
- Mode 2 - “Karaoke” mode - music will **not mute** except during radio transmissions.- MUTE button 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 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 an external switch installed either in the aircraft, or connected to the AUX button logic output pin on the PMA8000BT. Consult your installer for details.

Music 1 Volume

We recommend adjusting the entertainment volume at the sources, and only using the audio panel as a master gain control. However, the Music 1 volume can be adjusted if desired at the front panel by pressing the combinations of keys listed.

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

Press **Hold Function** (TEL) and **Mute** for more than one second to decrease music 1 volume. The music can be turned completely off, so if you aren't hearing what you expect, try increasing the volume as described above.

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

Swap Mode (Switch from Com 1 to Com 2 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.

Internal Recorder System

The Intercom Recording System is a continuous loop recorder, (last message received will be the first heard), the recorder has 60 seconds of recording time, or up to 16 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 PMA8000BT.

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 retail sale by authorized PS Engineering dealer. 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 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
(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.