

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 unit is covered by a one-year limited warranty. See warranty information. Call PS Engineering, Inc. at (865) 988-9800 before you return the 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: support@ps-engineering.com

NOTE: PS Engineering will not be responsible for any units shipped in the U. S. Mail.

Units received without either a Return Authorization or a contact telephone number will be refused and returned to the sender.

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Phone (865) 988-9800.



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



PAV80

High-fidelity Audio-Video
In-Flight Entertainment System
With DVD/MP3/CD Player
and Radio Receiver
Operation Manual

FAA-PMA

Pilot's Guide and Operation Manual

202-800-0101

Rev 2

August 2003

Flying Never Sounded So Good!™

Section I, General Information

INTRODUCTION

Congratulations on your selection of the PS Engineering PAV80 In-flight Entertainment system. This system, designed specifically for general aviation, combines a Digital Versatile Disc (DVD) player with CD and MP3 capability with an AM/FM radio for ultimate in-flight entertainment capability.

Please read this Pilot Guide so you can become familiar with the features packed into the PAV80.

EQUIPMENT DESCRIPTION

The PAV80 System is a single panel mounted unit that contains a DVD player with MP3 media capability and an AM/FM radio receiver. It also contains a high-fidelity stereo amplifier to provide the entertainment output to the aircraft audio system. Up to four remote-mounted video displays can provide visual entertainment to the passengers (with optional equipment required to use more than one display).

An 8-digit LED display provides information about the systems modes and media in use.

Because of the high-speed data requirements of the DVD mechanism, the radio frequency reception using the internal antenna is limited. Therefore, when used for AM or FM reception, the operator may only receive the most powerful 3 to 5 stations. In contrast to an ADF, where audio fidelity is not important, the PAV80 requires higher signal levels to ensure fidelity.

For optimum performance, some installers may desire an external AM/FM antenna. PS Engineering recommends a Comant CI-222-series.

Section II OPERATION

At PS Engineering we believe that we have made the PAV80 simple to use. However, we have packed loads of features into the system to make it flexible, so it will meet your requirements for cross country flying in light aircraft.

We'll start with a tour of the front panel. We call it human-machine interface, but you can call it knobs and buttons.

the MP3 tagged information screen. Select the General tab to show the information that can be modified for the PAV80.

The PAV80 can display song name, artist, album, and filename. This corresponds to the Track title, Artist, Album, and Track Filename fields shown on the screen. Each of these fields can be modified to the user's preference. Note: The PAV80 is limited to displaying up to 22 characters in each of these fields. Click on the appropriate field to modify the track title, artist, or album. To modify the filename, select the Rename Files button in the lower left corner. Click on the field labeled New File Name and press OK to change the file name. Press the Apply and OK buttons to update the information

Section IV- Warranty and Service

Warranty

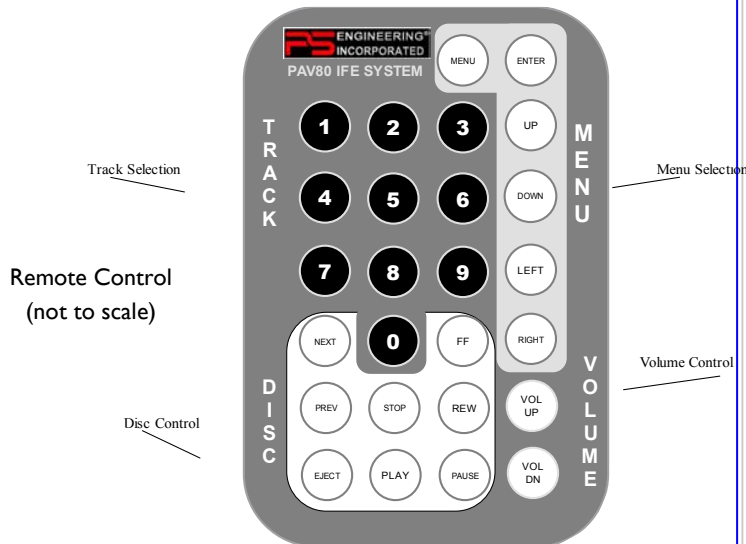
In order for the factory warranty to be valid, the installations in a certified aircraft must be accomplished by an FAA-certified avionics shop and authorized PS Engineering dealer. If the unit is being installed by a non-certified individual in an experimental aircraft, a factory-made harness must be 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 one (1) year from the date of installation as recorded in aircraft logbook and/or on FAA Form 337. During the **twelve (12) months**, 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.

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

The remote supplied is used to control various functions of the secondary audio output, as well as the DVD menu functions.



The Remote uses a CR2025 type battery, which is located under the cover on the bottom. Should the remote unintentionally depart the aircraft, additional units are available at 1-800-ICS-AERO

Appendix A – MP3 Creation

Creating MP3s from an Audio CD

Start MusicMatch JukeBox. (www.musicmatch.com) Press the recorder button, which is the small red dot located in the top right corner. This will open the recorder window located at the bottom of the screen.

Insert an audio CD into the CD drive. MusicMatch will automatically read the disc and display the contents in the recorder window. Press the REFRESH button to check the Internet database for CD information, such as artist, song title, or album. If this information is available, it will automatically be updated in the file.

Select Options->Recorder->Format and select either MP3 or MP3PRO format. You may also set the MP3 file quality under the Options->Recorder->Quality menu.

Select the tracks to be copied to MusicMatch by checking the box next to the desired track. Press the record button in the lower left corner when complete

MusicMatch will then convert the files from the audio CD to MP3 and display them in the Music Library box located in the middle of the screen

To edit the MP3 information, select a file in the Music Library and press the TAG button in the top right corner of the Music Library box. This will display

Operating Principals

The first thing you will notice about the PAV 80 is the 8-digit display on the front. You'll notice that it is split into two sections, while displaying the modes. The left side shows the audio source delivered to the front seats in the airplane the right side displays the audio fed to the passengers*.

*NOTE: This description is valid when interfaced with PS Engineering PMA7000-series audio panels, other audio systems may differ. Consult your professional installer for details

The PAV80 is divided like this to give the ultimate in multi-tasking entertainment audio. The pilot can listen to music in the FM radio while the passengers may watch the DVD movie.



Front Panel Controls

We have two knob/pushbuttons on the PAV80, Volume (1) and Mode (2). The volume control also turns the unit on and off, and is used to select the whether the knob adjusts Crew volume, or the passenger volume level.

The “MODE” (2) knob is used to control the functions of both the crew and passenger, and it changes the disc track if the crew is selected to a disc mode.

Four push buttons (3) grouped around the display control the radio and disc functions. There is an “eye” (4) on the front panel, which received commands from the remote control.

The disc slot (5) is where your favorite music or movie goes in. Give it a gentle push, and the player will roll the disc into the machine.

Quick start – Six steps to motion picture success

Okay, you've been waiting long enough, let's see the show! This section will get you enjoying in-flight entertainment in a jiffy.

Although the PAV80 is designed for in-flight entertainment, we recommend that you familiarize yourself with it on the ground first.

1. Turn on battery and avionics master.
2. If it isn't on already, turn on the audio panel (or intercom).
 - a. Get comfortable in the headset
 - b. Turn on the PAV80. It doesn't come on by itself, we designed it to be off, until you want it on. Turn the unit on by pressing the volume knob (1).
 - c. Also turn the display on by pressing the power button.
 - d. Put the DVD into the slot, and push gently until the player takes over. The display will show "Loading".
 - e. After the video shows the copyright restrictions, the Play/Pause will blink.
 - f. When the Play/Pause (▶) light begins to blink, push it.
 - g. Usually a DVD will present you with a menu screen, where you can select all its special features you want. For a quick movie:

Push the Play/Pause button again, and the movie will play from beginning to end

Action	Disc Result
▲ short press	Stop
▲ long press	Eject
▶ short press	Pause
▶▶ press	Change to FM, AM, AUX (if enabled)
◀◀ press	Toggle into Random or normal Sequence play
DATA knob CW	Quick Track Select next track and play
DATA knob CCW	Quick Track Select previous track and keep playing
DATA knob Push	Selects Entertainment Mode

Video Source Select

The PVT801 is capable of displaying video format in NTSC (USA) or PAL (International) standards. HINT! If your display is behaving strangely, check the video mode. We have some experience in this regard.

In addition, the display has two inputs, AV1 and AV2. The AV2 input is not mechanized in the PS Engineering system, so you will not get a picture if the display is inadvertently put in this mode. More experience here.

Radio Operation

Select the AM or FM as above. The display will change to the FM frequency (XX.X), or AM (XXX). The right knob will then increase or decrease the radio frequency.

The other quick way to change the radio channel is to push the up or down buttons to scan for the next available station.

Receiver Threshold Adjustment

The amount of signal required to stop the frequency scan on a frequency can be adjusted to suit your needs. When the crew is in FM or AM mode, press and hold the MODE knob for 3 seconds to enter the sensitivity adjustment. The LED display will show "SENSE xx" where xx is a level from 1-10 (1 is lowest threshold or weakest signal, 10 is more powerful station). This display will revert to the MODE display after 5 seconds with no adjustment. There are two different sensitivity levels (FM and AM) and once adjusted, they will be stored in non-volatile memory.

Radio Reception

Because of the high-speed data requirements of the DVD mechanism, the radio frequency reception using the internal antenna is limited. Therefore, when used for AM or FM reception, the operator may only receive the most powerful 3 to 5 stations. In contrast to an ADF, where audio fidelity is not important, the PAV80 requires higher signal levels to ensure fidelity.

For optimum performance, some installers may desire an external AM/FM antenna. PS Engineering recommends a Comant CI-222-series.

Remote Operation



PVT801 Video Display Terminal operation

The on/off switch on the LCD video terminal is independent of the PAV80 itself. This is the round button along the right side of the PVT801.

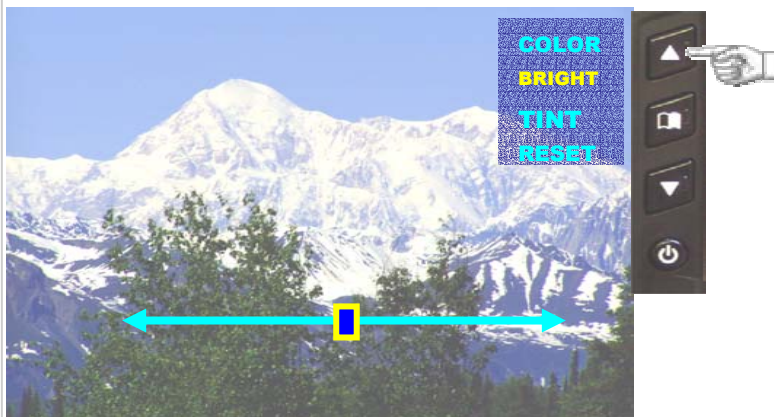
The other buttons control the picture quality of the PVT801, and the input modes.

NOTE: best results will be obtained with some shade on the PVT801 screen.

PVT801 MENU

The on-screen display for the PVT801 controls the picture tint and color, as well as the brightness. A final selection will restore the factory default settings (when you get totally confused!)

Press the MENU icon to activate the on screen menu display, select the secured function by touching the menu button again, and then use the up and down arrows to slew the range.

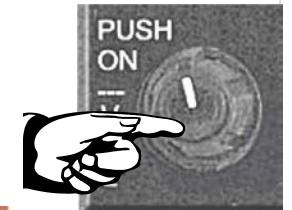


Changing the display brightness

Detailed Operation

On/Off

Push once to turn the unit on. Push again momentarily, and the unit goes off, displaying “shutdown” as the system performs house-keeping chores before going to sleep.



Push on-off



NOTE: It is NOT necessary to “shutdown” the PAV80 before turning the avionics master off. However, if the PAV80 is switched off in the middle of a movie, it will not remember the place where it stopped, and start over from the beginning.

Volume control for crew

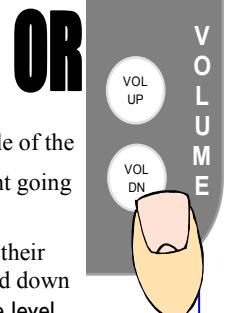
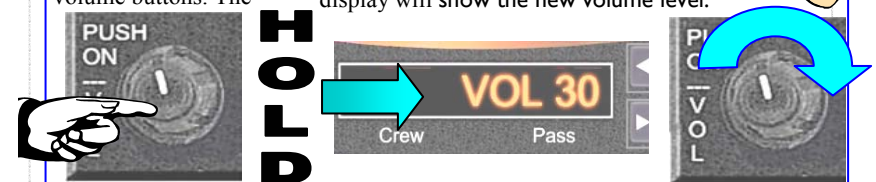
Twisting the volume knob clockwise will increase the CREW volume. The display will change to VOL, followed by a number representing the volume level.



Volume control for passengers

To change the Passenger volume control from the PAV80 panel, push AND HOLD the volume control until the right side of the display changes to VOL. Then the volume of the entertainment going to the passengers can be changed.

In addition to the PAV80 controls, the passengers can control their volume from the remote control, simply by pressing the up and down volume buttons. The display will show the new volume level.



Audio Source Selection

The PAV80 system offers unprecedented control over the internal and external audio sources, for true multi-tasking audio. The split functions allow the crew to listen to a different audio source than the passengers, or the same source.

Source Selection

CREW SOURCE SELECTION

PASSENGER SOURCE SELECTION

CREW	PASSENGERS
DISC	DISC
DISC	RADIO
DISC	AXA
DISC	OFF
RADIO	DISC
RADIO	RADIO
RADIO	AUX
RADIO	AXA
RADIO	OFF
AUX	RADIO
AUX	AUX
AUX	OFF
AXA	DISC
AXA	AXA
AXA	RADIO
AXA	OFF
OFF	DISC
OFF	RADIO
OFF	AUX
OFF	AXA
OFF	OFF

Push the right knob (MODE) to enter the source selection mode. When the button is pushed once, the left side of the display (Crew) can be changed. Push again and the passengers' audio source is changed. The mode is accepted- Locked in- when the button is pushed again. To change the passengers' audio source, press the mode button twice, until the right side of the display blinks. Then select the source, and press again to accept your new audio source.

Audio Combinations

The PAV80 has effectively three different audio sources, the internal disc (DVD, CD, or MP3), the radio (AM or FM), or an auxiliary input. The auxiliary is sub divided into AUX, which is audio/video from an external

source, or AXA, which is just the audio portion without video. There is only one input, so you can't use AUX and AXA at the same time.

Although the unit is capable of OFF/OFF mode combination, there isn't any reason to use this mode, except for silent movies.

Playing discs

Your PAV80 can play many different types of recorded disc media, including CD, CD-R, CD-RW, MP3, and DVD. This means that virtually any music you have, from a prerecorded audio CD, or a home movie stored on a DVD, can be played in your unit.

Simply insert the disc into the slot. The PAV80 will accept the disc, and automatically detect the type of media.

PAV80 panel Unit Display Dimming

The display is adjusted for ambient light conditions by the connection to the aircraft dimmer bus. If the radio light dimmer is turned all the way off, the display will be at full intensity. So, if your PAV80 display seems dim, check your radio light dimmer control.