Special Mission Audio Controllers

PS ENGINEERING® INCORPORATED
Sound Quality. Sound Engineering.

PAC45A

Integral Parts of a Helicopter:

Flying Never Sounded So Good®

PAC45

Bluetooth® Connectivity

MultiTalker™ True Dimensional Sound

flightmate® Recordable Audio Alerts

A Game Changer for Special Mission Pilots

It is very common that pilots of special mission aircraft need to listen to multiple radios at the same time, it is part of their job. Differentiating specific radio calls is never an easy task — that is until now, with MultiTalker™.

MultiTalker™ is a patented technology that was developed by the Wright Patterson Air Force Laboratory for USAF pilots. Exclusively licensed to PS Engineering, this technology has been brought to thousands of pilots and their positive response has been phenomenal.

By placing the various COM radio signals in unique positions within a stereo headset, the pilot can pay attention to the radio that is important at any instant in time. This helps the pilot to not miss that urgent call, even though they were already listening to something else.

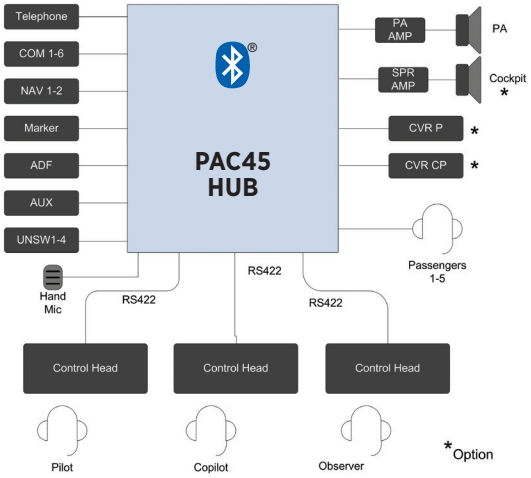
The uniqueness of the PAC45 doesn't stop there. It has *flightmate*®, an integrated audio alert system with 3 user recorded alerts. Connected to discrete inputs, this system helps alert the pilot of a condition that has changed. Using PS Engineering's exclusive IntelliStore™, the pilot can easily record their recordings by simply using their headset microphone to record their own unique alerts.

The stereo headphone audio amplifiers are capable of providing 200 mW in General Aviation headphones, providing the audio punch that is required for the noisiest of environments. Audio fidelity, even at these high levels, has not been sacrificed.

The PAC45 front panel layout can be ordered to reflect the exact avionics installed in the aircraft.

CHECKLIST OF CAPABILITIES:

- Up to six (6) Com radio interfaces
- MultiTalker™ True Dimensional Sound – 9 selectable locations
- Up to 3 individual control heads via RS-422
- Seven-place intercom with Auto VOX and PTT-ICS VOX
- Custom legends are quick and easy to order for professional tailored form and function
- *flightmate*® field recordable audio alerts system
- Satellite Radio interface with full duplex phone
- Bluetooth interface for wireless phone and music
- Six (6) switched inputs (Note: AUX switches 3 inputs)
- Individual radio volume controls with pop-out switches
- 1.88" DZUS mount connector compatible with industry standard
- Night Vision compliant to ANVIS III
- Remote ICS (ISO/All/Crew) Control
- Public Address Output
- SWAP – only swaps the Coms you're monitoring
- Radio Receive Indicator (RXI)
- Intercom call feature
- High noise configuration
- Reversionary mode
- No computers or custom software programs required



TSO COMPLIANCE	
Audio Selector/Intercom	FAA TSO C139a
Applicable Documents	RTCA/DO-214A, RTCA/DO-160G RTCA/DO-178C, DO-254
ENVIRONMENTAL QUALIFICATIONS	
Operating Temperature Range Hub: Control head:	-55º C to +70ºC -20º C to +55ºC
Altitude	Up to 50,000 feet in an non-pressurized area
Weight	2.0 lb. (0.9kg)
Dimensions	Height: 1.88" (3.3 cm) Width: 5.75" (15.9 cm) Depth behind panel: 5.5" (18.16 cm)
POWER REQUIREMENTS (Including Internal Lighting)	
Voltage	28 VDC Systems 20.5 VDC - 32.2 VDC
Maximum Current	0.5 Amp (Externally protected by a 1A pull-type breaker)
AUDIO SELECTOR SPECIFICATIONS	
Audio selector panel input impedance	510 Ω
Input Isolation	-60 dB (min.)
Switched Receiver Inputs	13 (COM 1 – COM 6, TEL, NAV 1, NAV 2, Marker, AUX) (Can be relabled as desired)
Unswitched Inputs	4
Transmitter Selections	6 (COM 1, COM 2, COM 3, COM 4, COM 5, COM 6) (Can be relabled as desired)
Headphone Impedance	150 Ω - 600 Ω
Headphone Output	200 mW into 150 Ω each side (left and right) headset, no clipping <.5% THD typical
Microphone Impedance	150 Ω - 600 Ω
Bluetooth Radio	Music and cell phone
INTERCOM SPECIFICATIONS	
Intercom Positions	7 places (with individual IntelliVox® circuits)
Music Inputs	1 (wired) plus Bluetooth
Music Muting	>-30 dB "Soft Mute" when Com or intercom active
Distortion	<1% THD @ 200 mW into 150 Ω
Mic Freq. Response, 3 dB	300 Hz – 6000 Hz
Music Freq. Response, 3 dB	20 Hz – 16 kHz

Bluetooth® Connectivity

MultiTalker™ True Dimensional Sound

flightmate® Recordable Audio Alerts

PAC45A

Using the successful PAC45 as the foundation, the all digital PAC45A adds capabilities that have been requested from operators with unique and additional requirements.

Two additional Com radios were added for more advanced operational requirements. With a total of 8 Coms, MultiTalker™ provides up to 9 unique positions so that each radio has its own location within the stereo headset.

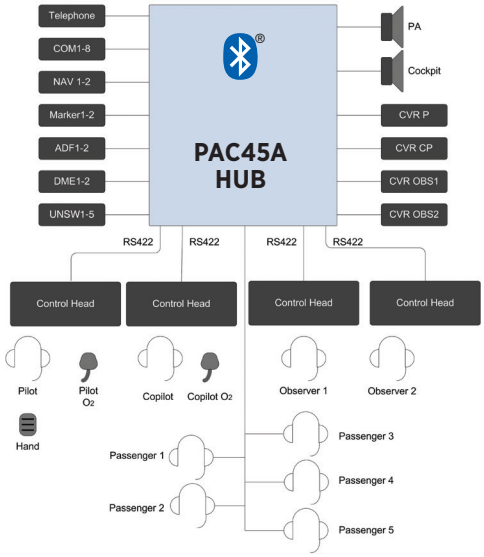
Up to four control heads can be connected to the PAC45A hub. Like the PAC45, the hub is the central wiring location for all of the radios with a simple RS-422 serial bus connected to each control head, making the wiring significantly easier when compared to analog audio controllers.

The PAC45A integrates Receive Audio Indicator (RXI) inside the audio panel. Additionally, there are two built-in 10 watt speaker amplifiers for cockpit and public address.

Up to 9 audio alerts are also available, and through the use of IntelliStore each of these inputs can be custom recorded. Either rising, falling, or Sonalert inputs can activate these alerts. Once acknowledged, they are reset and then begin monitoring the inputs again. Sonalert triggers will remain active until the Sonalert voltage is removed.

CHECKLIST OF CAPABILITIES:

- Eight (8) Com radio Interfaces
- MultiTalker™ True Dimensional Sound – 9 selectable locations
- Nine-place stereo IntelliVOX® intercom
- Up to 4 control head capability
- *flightmate*® with IntelliStore™ provides 9 customizable Audio Alerts
- Bluetooth for cellphone and music inputs with Softmute™
- Radio Receive Indicator (RXI)
- Dual CVR (pilot & copilot)
- Independent and Master Radio Volume Control
- Field configurable volume controls for unswitched & alerts
- High noise configuration (low mic gain)
- Offside Com allows monitoring other Coms when transmitting
- Night Vision complaint to ANVIS III
- PIC (Pilot in command) transmit override
- Swap mode, only swaps on the Coms you're monitoring
- Remote Intercom (ISO/ALL/CREW) Selector switch
- 35 second stuck PTT disconnect
- Field configurable switched settings – No computer necessary
- 5VDC to 28VDC lighting with field adjustable settings
- CALL feature
- Reversionary mode
- 2-Year PS Engineering ProSupport™

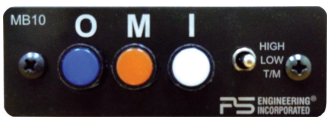


TSO COMPLIANCE	
Audio Selector/Intercom	FAA TSO C139a
Applicable Documents	RTCA/DO-214A, RTCA/DO-160G RTCA/DO-178C, DO-254
ENVIRONMENTAL QUALIFICATIONS	
Operating Temperature Range Hub: Control head:	-55° C to +70°C -20° C to +55°C
Altitude	Up to 50,000 feet in an non-pressurized area
Weight	HUB45R 2.0 lbs. (.905 kg) CTL45A 1.0 lbs. (.45 kg)
Dimensions CTL45A: HUB45R:	Height: 1.88" (3.3 cm) Width: 5.75" (15.8 cm) Depth behind panel: 2.35" (18.16 cm) Height: 1.9" Width: 5.88" w/mounting flanges, Length 7.22", 12" w/ all connectors
POWER REQUIREMENTS (Including Internal Lighting)	
Voltage	28 VDC Systems 20.5VDC - 32.2VDC
Maximum Current	0.5 Amp (Externally protected by a 1A pull-type breaker)
AUDIO SELECTOR SPECIFICATIONS	
Audio selector panel input impedance	510 Ω
Input Isolation	-60 dB (min.)
Switched Receiver Inputs	17 (COM 1-COM 8, Tel, AUX 1-8) (Can be relabled as desired)
Unswitched Inputs	5
Transmitter Selections	8 (COM 1, COM 2, COM 3, COM 4, COM 5, COM 6, COM 7, COM 8) (Can be relabled as desired)
Headphone Impedance	8 Ω – 600 Ω
Headphone Output	200 mW each side (left and right) headset, no clipping <.5% THD typical
Microphone Impedance	150 Ω - 600 Ω
Bluetooth Radio	Music and cell phone
INTERCOM SPECIFICATIONS	
Intercom Positions	9 places (with individual IntelliVox® circuits)
Music Inputs	1 (wired) plus Bluetooth
Music Muting	>-30 dB "Soft Mute" when Com or intercom active.
Distortion	<1% THD @ 200 mW into 8 Ω or 600 Ω
Mic Freq. Response, 3 dB	300 Hz – 6000 Hz
Music Freq. Response, 3 dB	20 Hz – 16 kHz

ACCESSORIES

Marker Beacon Receiver (MB10/MB10R)

The MB10 is a 75 MHz Marker Beacon receiver with 3-lamp indications for ILS Systems. Also available as a remote-mounted unit - MB10R.



MB10/MB10R SPECIFICATIONS	
FAA-TSO	TSO C35d; RTCA DO-143
Power	11-33 VDC, <0.25 A
Frequency	75 MHz Crystal Controlled
Sensitivity Low: High:	Preset at factory for field application 1000 µVolts (Hard) (360 to 570 µV soft) 200 µVolts (Hard) (130 to 200 µV soft)
Selectivity	-6 dB at ±10 kHz; -40 dB at ±120 kHz
External Lamp Output	7.5 VDC (±4 VDC unloaded, at maximum brightness) positive when active, max. current 125 mA
MM Sense	Active high (4.5 ± 1.0VDC)
Output impedance	510 Ω
Audio Output	38 mW <1% THD typical
Temperature	-15° C to +55° C
Altitude	55,000' unpressurized
Weight	6.5 oz.
Dimensions	0.95" H x 2.8" W x 4.85" D

Tactical Radio Adapter (12100)

Headphone and microphone signals from non-General Aviation applications are not compatible with FAA compliant audio device design standards. The use of the 12100 converts these non-GA radios into the appropriate inputs and outputs so they will work with GA audio systems.

The 12100 audio input can be configured for inputs of either a 150 Ω or 8 Ω speaker while the microphone output will change non-carbon mic equivalent types to carbon mic equivalent.

The 12100 also provides the required mic bias source, if required. The 12100 is capable of providing side tone during transmissions.

12100 SPECIFICATIONS – NOT FAA APPROVED	
FAA-TSO	C139a, RTCA-214A
Power	11 - 33 VDC, <0.25 A
Aircraft Radio Impedance	510 Ω
Weight	10 oz.
Dimensions	1.27" H x 4.0" W x 5.65" D Including mounting flange & sub-d connector

GA to Mil Headset Adapter (HSA13)

The HSA13 is a remote-mounted low impedance to high impedance adapter for adapting military-style headsets to civil aviation audio systems. It is a direct replacement for the DB Systems DB213 microphone amplifier, and can also serve to convert high impedance headphone audio to low impedance signals.

HSA13 SPECIFICATIONS	
FAA-TSO	C139a, RTCA-214A
Power	None required
Conversion (switch configurable)	5 Ω input to 150 Ω Microphone or 600 Ω output to 8 Ω Headphone
Weight	4 oz.
Dimensions	1.35" H x 3.05" W x 3.00" D (w/ mounting flanges)

IntelliPax™ Expansion Unit (116X6)

The IntelliPax™ is a 6-channel, hi-fi stereo expansion unit that can add 6 additional stereo headset intercom positions to PS Engineering's intercoms and audio panels. A single shielded cable is connected between the device to be expanded and to the specific IntelliPax™ unit. IntelliPax™ has our much lauded IntelliVox®, an automatic VOX that eliminates any VOX adjustments.

116X6 SPECIFICATIONS	
FAA-TSO	C139a, RTCA-214A
Power	11 - 33 VDC, <0.25 A
Headphone Impedance	150 Ω - 600 Ω typical
Audio Output	<10% @ 35mW into 150 Ω
Weight	10 oz.
Dimensions	1.27" H x 4.0" W x 5.65" D Including mounting flange & sub-d connector

PRD60 Audio Alert Unit

The PRD60 contains six stored messages. An outside annunciator, such as an electronic engine instrument, can trigger these messages. When there is an announcement, it will be repeated every two seconds until the remote mounted ACK button is pushed. This stops the played annunciation until the next announcement is triggered (the next falling edge). For an additional fee, custom messages can be created.

PRD60 SPECIFICATIONS	
FAA-TSO	C139a, RTCA-214A
Power	11 - 33 VDC, <0.25 A
Temperature	-15º C to 55º C
Number of Discrete Inputs	6 (rising or falling edge)
Altitude	Up to 50,000 feet unpressurized
Weight	8.50 oz.
Dimensions	1.27" H x 4.0" W x 5.65" D Including mounting flange & sub-d connector

Dual Speaker Amplifier (PSA210)

The PSA210 is a remote-mounted dual speaker amplifier that is capable of driving two 4 Ω speakers independently at 10 Watts each. This is a compact solution for providing clean audio output to cockpit, cabin, or public address speakers.

PSA210 SPECIFICATIONS	
FAA-TSO	C139a, RTCA-214A
Power	11 - 33 VDC, <1.25 A
Output	10 Watts at 28 VDC 5 Watts at 14 VDC per amplifier
Weight	8 oz.
Dimensions	0.94" H x 5.9" W x 3.33" D Including mounting flanges & sub-d connector

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