

PTS, Inc.

Harris HR-5833/1523 Power Supply Docking Station (PSDS) Manual



MODEL #: AS0150-HR-5833/1523

Includes 1 PTS-H-0003J Cable (CAB.AUD.001)

Includes 1 5833 DC Power Cable (CAP.DPW.001)

Includes Filter Pack

Compatible with 1 RF-5833H PA

Compatible with 1 AN/PRC-150

Compatible with 1 RT-1523 (E/G) (ASIP) and 1 AM-7238B RFPA

Document PTS-HR-5833/1523-2018-12-13

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PTS

Expeditionary Communications

WARNING: TO PREVENT PERSONAL INJURY, DEATH OR EQUIPMENT DAMAGE DO NOT SHORT-CIRCUIT, DAMAGE, BY-PASS INTERNAL FUSES OR HANDLE INAPPROPRIATELY THE EXPOSED HARRIS HIGH VOLTAGE POWER CONNECTORS.

SAFETY INSTRUCTIONS

Warning and important safety instructions appearing in this manual are not designed to cover all possible conditions and situations that may occur. Common sense, caution and reasonable care must be exercised when installing, maintaining or operating the power supply docking station (PSDS).

When using the PSDS basic safety precautions should always be observed including the following:

Read all instructions prior to installation or use.

To protect against risk of electrical shock, DO NOT immerse the cord, plug or PSDS in water or other liquids.

To reduce the risk of electrical shock or fire, DO NOT disassemble the PSDS. Repairs or adjustments to the PSDS must be performed by a qualified technician of PTS.

DO NOT work on electrical equipment alone. Be sure another person qualified to administer first aid is present.

RF energy is present near the antenna during transmission. During low power operation maintain at least 30 inches between antenna and personnel during transmission. During power amplifier operations follow the standard practice of mounting the antenna well away from the users.

The PSDS is not designed to be operated in a vehicle.

Do not operate the PSDS with a damaged cord, plug or after the PSDS has been dropped or damaged in any manner. Return the PSDS to PTS for examination, repair and electrical or mechanical adjustment as required. Call PTS toll free at 1-877-737-5832 or email: info@pts-inc.com for additional instructions or guidance.

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Power Supply Docking Station (PSDS) Description

Perkins Technical Services, Inc. (PTS) has developed a rugged, lightweight, user-friendly power supply docking station (PSDS) for tactical radios. The PSDS provides the capability of converting 85 to 260 VAC power (47-440Hz) to DC power to operate all SINCGARS series RT-1523 (E-G) radios, the AM 7238B/VRC RFPA and to operate an AN/PRC-150 radio mounted to a RF-5833H in a continuous and efficient safe manner.

The PSDS's unique, lightweight slide-in, slide-out design allows for easy use and installation. The PSDS has been developed to provide increased flexibility and to reduce operation costs resulting from the use of expensive batteries and/or other power sources. The PSDS worldwide applications include tactical operation centers, command posts, range operations, field and garrison operation centers, test and maintenance facilities, training sites, deployment and staging checkpoints, remote control operations and forward operation bases.

The PSDS reduces ARMY power requirements, soldier workload and logistical support needs.

The PSDS provides the optimum solution for combat support operations requiring continuous, uninterruptible, reliable communication when AC power is available.

Specifications

Features

Docking positions for 1 SINCGARS RT-1523 (E/F)
Docking position for 1 AM-7238B RFPA
Docking positions for 1 AN/PRC-150
Docking position for 1 RF-5833H
TOCNET/ radio control for SINCGARS
Worldwide frequency input 47 to 440 Hz
Worldwide AC voltage input 85 to 260 VAC
Fully automatic voltage and frequency selection worldwide, no manual change required
Built-in voltage surge protection
Environmental operating range:
 Temperature: -30°C to 50°C
 Relative Humidity: 5% to 95%
Illuminating LED "Power-On" rocker switch
Illuminating "Active Network" green LED indicator
Ten-foot AC power cord- U.S. (worldwide power cords available)
High fidelity integral speaker (4 inches)
Volume control knob for speaker
Supports one remote LS-671 speaker
Rugged, self-contained system packaged in mil-spec transit case
24/7/365 radio operations

Physical Dimensions

(d) 22.5" x (h) 13" x (w) 17.7"
(d) 57.15cm x (h) 33.02cm x (w) 44.96cm
PSDS weight: 28lbs, 12.6kg
PSDS in Case (by itself): 49lbs, 22.05kg

Operational Benefits

Enhanced command and control
Increased flexibility
Increased training opportunities
Reduced logistical burden and costs

User Educational Requirements

Prior to use of the PSDS, the user should have completed the Harris and SINCGARS Operators Course. The user should have a thorough understanding of Harris and SINCGARS operations and a basic understanding of the AN/PRC-150 and SINCGARS set-up and configurations.

Operation of PSDS with Harris Radio (Left Side)

SAFETY NOTICE: Power down the radio and ensure the PSDS power switch is in the off position before installing or connecting radios. Failure to do so may result in electrical shock.

Basic PSDS Set-Up

The User will have to supply the RF-5833H PA and a PA Control Cable (10535-0720-B17).

Amplifier / Radio Assembly Installation

Facing the PSDS, take one RF-5833H and insert it onto the PSDS. Begin by looking down from the top to align the power amplifier's rear connector with the PSDS connector. Lock the amplifier in place by turning the knurled thumbscrews clockwise to seat the amplifier. Attach the PTS-H-0003J Audio Jumper to Audio on the AN/PRC 150 and to Radio on the PSDS. The Handset is attached to the MIC on the PSDS as shown on the photo below.



Attach the CAB.DPW.001(101.115.1500) Power cable to the back of the PSDS, 28V DC Power Out Connector and attach the RF-5833 to the DC Power Connector as shown on the photo.



Antenna & Handset Installation, Radio Configuration

To ensure proper operation an HF antenna (not the manpack antenna) must be connected to the amp or you will experience excessive noise. (PTS PUR.ANT.104 HF Antenna with PTS PUR.ANT.103 7m Antenna Mast works well with this system.) Connect the antenna connector to the installed amplifier. The user needs to place the antenna 100 feet away from the PSDS using the LMR-400 antenna cable. Attach the appropriate handset. Inspect the AC power cable for cuts, frays or other damage. If damaged, replace the power cable. Plug the appropriate power cable into the back of the PSDS and into the AC power source (grid or generator power, worldwide). You are now ready to perform radio operations.

Note: The PSDS provides worldwide auto switching power adjustment. As long as the proper power cable is used for the AC power source, the PSDS will automatically adjust to the provided input. If the power is “dirty” and experiencing fluctuations, the PSDS will continually adjust for these changes.

PSDS Operation for Harris Radio (Left Side)

Facing the PSDS you will see two “POWER ON-OFF” rocker switches mounted on the front enclosure. Turn the switches to the on position (they will illuminate). The AN/PRC-150 is now powered and ready for normal operation.

Once the radio has completed self-test the user may program the radio for frequency, COMSEC configuration, power mode, etc. per the AN/PRC-150 manual. Under normal conditions the radio will operate using an individual frequency providing the user with one radio network (NET).

The system is now ready to operate. There is a volume control for the radio network. The PTS-H-0003J audio jumper must be attached as seen earlier. The volume on the AN/PRC-150 must be on at least mid-range for the volume on the HR-5833/1523 to work.

Turn the volume control counterclockwise to the stop. Adjust the volume knob to midrange. The radio handset volume affects speaker volume. The user will need to ensure the radio volume is adequate to drive the PSDS audio circuitry for proper operation. The user may now turn up the radio. The user will note there is an ACTIVE NET LED for the NET. When transmitting or receiving, the LED for the ACTIVE NET will illuminate green.

The LED provides the user with a visual cue indicating NET activity if the volume is turned down or if multiple PSDS are deployed in a system rack. The LED will allow the user to see which NET is active.

The audio circuitry is designed to the radio to receive and for the sound to be broadcast from the internal speaker. The system is designed using high fidelity components providing very high-quality sound. The user can control the volume for the radio independently allowing for the net to be broadcast though the speaker. The user can turn down the NET when required using the volume knob.

The user is now ready to experience full radio capability using AC power to operate the AS0150-HR-5833/1523 communications system.

Operation of PSDS with SINCGARS Radios (Right Side)

SAFETY NOTICE: Power down the radios and ensure the PSDS power switch is in the off position before installing or connecting radios. Failure to do so may result in electrical shock.

Basic PSDS Set-Up

Radio Installation

Facing the PSDS take one RT-1523 radio and insert the radio onto the PSDS. Begin by looking down from the top to align the radio's rear connector with the PSDS connector. The user needs to be certain the radio is seated completely; otherwise, the radio will not power-on. New J1 connectors have a coating on the connector sleeve that will need to be worn down. During initial usages it is advised to slide the radio on and off the connector multiple times to wear the coating down. After the coating has been worn down firmly push the radio onto the PSDS. Visually check the seating from above and ensure the radio is fully seated. Once the radio is aligned on to the PSDS, the user needs to be certain the notch on the underside of the radio is aligned with the clamp, which protrudes up from the PSDS. Now the radio can be locked in place by turning the thumbscrew clockwise to seat the radio. Repeat this process to mount the radio on the left side.

RFPA Installation

The user can mount the AM-7238B RFPA after the SINCGARS radio is mounted. Begin with the RFPA on the right. Lay the RFPA on its side with the heat sink fins facing up on the top rack of the PSDS with the connector towards the rear. Slide the RFPA onto the connector. Then lock the RFPA in place with the thumbscrew and clamp.

Antenna & Handset Installation, Radio Configuration

To insure proper operation of an OE-254/GRC antenna be certain to place the antennas an appropriate distance from the PSDS (per SINCGARS operator's manual). Connect the antenna connector to the RT-1523, the J1 connector on the RFPA using the appropriate W2 cable. Attach the appropriate handset. Inspect the AC power cable for cuts, frays or other damage. If damaged, replace the power cable. Plug the appropriate power cable into the back of the PSDS and into the AC power source (grid or generator power, worldwide). You are now ready to perform radio operations.

Note: The PSDS provides worldwide auto switching power adjustment. As long as the proper power cable is used for the AC power source, the PSDS will automatically adjust to the provided input. If the power is "dirty" and experiencing fluctuations, the PSDS will continually adjust for these changes.

The PSDS has 2 sides; right and left. Never connect a right-side radio to a left-side RFPA or accessory. Doing this will damage the radio and the PSDS. This type of damage is not covered under the PSDS warranty.

PSDS Operation

Facing the PSDS you will see two “POWER ON-OFF” rocker switches mounted on the front enclosure. Turn the switches to the on position (they will illuminate) and then turn on the RT-1523 (Right Side) and the RF-5833H PA (Left Side).

Once the radios have completed self-test the user may program the two radios for frequency, COMSEC configuration, power mode, etc. per the SINCGARS operations manual. Under normal conditions each radio would operate using an individual frequency providing the user with 2 individual radio networks (NET).

The system is now ready to operate. There are individual volume controls for both the right and left radio network.

Turn the volume control counterclockwise to the stop. Adjust the volume knobs to midrange. The RT-1523 radios are designed for audio signals to be provided through the radio connector on the rear; no volume adjustment is required on the SINCGARS radio, the Harris 150 radio volume needs to be set to mid-range. The user may now turn up one or both radios. The user will note there is an ACTIVE NET LED for each NET (right and left side). When transmitting or receiving, the LED for the ACTIVE NET will illuminate green.

The LED provides the user with a visual cue indicating NET activity if the volume is turned down or if multiple PSDS are deployed in a system rack. The LED will allow the user to see which NET is active.

The audio circuitry is designed to allow both radios to receive and for the sound to be broadcast from the internal speaker. The system is designed using high fidelity components providing very high-quality sound. The user can control the volume for both radios independently allowing for both nets to be broadcast though the speaker simultaneously. The user can turn down either NET when required using the volume knob.

The user is now ready to experience full radio capability using AC power to operate the AS0150-HR-5833/1523 communications system.

PSDS Operational Inputs and Accessories

SAFETY NOTICE: Power down the radios and disconnect (unplug) the PSDS power from the AC power source prior to connecting or configuring any of the following optional inputs or accessories.

LS-671 External Speaker Operation

The PSDS provides for the use of an external LS-671 for the radio net. There is a connector labeled LS-671 on the back of the PSDS. This connector allows the user to use a standard CX-13292 cable and LS-671 speaker. The user plugs the cable into the PSDS and the LS-671 speaker. One end is marked for the speaker; therefore, care should be taken to ensure the cable is connected correctly.

Periodic Maintenance

Maintenance Safety Notice

Power down the radios and disconnect (unplug) the PSDS power from any AC power source prior to the performance of any maintenance actions.

Air Filter Maintenance

On the bottom of the system you will find two fan covers that have filters. Depending on the environment, these filters will need periodic cleaning. Included with the PSDS are several replacement filters. When replacing the filters, wash the filters removed from the PSDS in warm soapy water, rinse thoroughly and allow to air dry. Filters should last indefinitely. The PTS recommended filter cleaning interval is 14 days of continual operation.

Filter Removal Process

- Turn the system onto its rear/back
- Snap the 2 covers holding the filter assemblies off from the bottom of the chassis
- Remove each filter assembly
- Snap out the filter retainer from the assembly to access the filter for cleaning or replacement
- After cleaning the dirty filter or replacing worn filters, insert the clean or new filter in the assembly and snap the retainer back into the filter frame
- Replace the assembly in the PSDS and snap the cover back in place

Exterior Cleaning

The exterior of the PSDS may require cleaning. Disconnect the PSDS from all power sources. The exterior may be cleaned with a mild, warm water soapy solution. Wipe with a damp towel and dry with a clean towel. Do not use abrasives or oil-based cleaners. Care should be taken to keep soap, water and debris from getting into the connectors and power plugs. **At no time should the PSDS be immersed in water or other solutions.**

The PSDS connectors and cables should be kept clean and free of dirt, grime and miscellaneous debris. If required, clean connectors with a medium stiff bristle brush and wipe off dirt. Avoid allowing moisture to contact the pins and receptacles in the connectors. If moisture does get into the connectors, allow the system to dry thoroughly prior to use.

System Repair or Return

If a PSDS malfunctions or becomes nonfunctional the user should notify PTS in Huntsville, Alabama. Call toll free 1-877-737-5832, commercial 256-539-6787 or contact via e-mail: support@pts-inc.com to receive instructions for repair and/or return.

Be prepared to discuss and troubleshoot the problem. The PSDS should be available to facilitate actual troubleshooting. PTS will determine if the PSDS needs to be returned for repair/replacement.

If PTS determines the PSDS requires return for repair, PTS will assign a Return Material Authorization (RMA) number. The RMA number should be clearly posted on the outside of the transit case as well as documented on a note inside the case detailing the specific problem or malfunction, user name, email, phone number and complete return address of the sender. Please do not include manuals, filters, cables (unless specifically requested), radios, power amplifiers, etc. when returning the PSDS for repair.

Label the package/case as follows:

Perkins Technical Services, Inc.
RMA # (contact PTS for RMA number)
1318-B Putman Drive
Huntsville, AL 35816
Attention: Repairs

Warranty

PTS warrants all power supply docking stations and transit cases furnished under contract to be free from defects in material and workmanship and will conform to all requirements of the contract. The PTS warranty shall be for a period of twelve (12) months from the date of the receipt by the user.

Any PSDS repaired under warranty shall be subject to the warranty of a new PSDS. This warranty shall be equal in duration to that set forth in the preceding paragraph and shall run from the date of receipt of the repaired or replaced PSDS by the user.

PTS shall not be obligated to repair or replace a PSDS or transit case if they become damaged through unauthorized maintenance or repair, incorrect operational set-up, abuse or neglect.

When a PSDS is returned to PTS within the warranty period set above PTS shall bear the transportation costs to the PTS facility and return.

When a PSDS is returned to PTS after the warranty period set above the user shall bear the transportation costs to the PTS facility. PTS will bear the return costs.

This warranty excludes all other warranties including the warranties of merchantability and fitness for a particular purpose.

Warranty repairs are normally accomplished within eight to ten business days of receipt of PSDS at the PTS facility.

Administrative

Inquiries concerning this manual should be referred to the following address:

Perkins Technical Services, Inc.
Attn: Support
1318-B Putman Drive
Huntsville, AL 35816

Technical difficulties or operational problems with the PTS PSDS may be resolved by contacting PTS using one of the following:

Toll Free 1-877-737-5832
Commercial 256-539-6787
E-mail support@pts-inc.com