PTS

Expeditionary Communications

Single AC/DC Power Supply
Docking Station for RF-5833-H Power Amplifier
AN/PRC 150 or AN/PRC 160 (with adapter)
Government Furnished Equipment:
RF-5833-H Power Amp
Adapter plate for AN/PRC 160

AS0150-HR-5833

User Manual

QMS 9000-110 Rev B

System Components: AS0150-HR-5833

PTS Part No.
CAB.APW.001
Description: Cable,
N5/15-SJT3X18 105-
C13/3M BLK CE

PTS Part No.
CAB.DPW.001
Description:
Cable, RF-5833 POWER

PTS Part No. 2003.4012
Description:
Foam Filter
80x80mm 45ppi

PTS Part No. CAB.AUD.001
Description:
Audio Cable TDR-Radio
Short Alpha 5116C 6x24awg, foil/braid shield, PVC outer jacket

PTS Part No. QMS 9000-110
Description: User Guide for
AS0150-HR-5833

PTS Part No. AS0150-HR-5833
Description: Harris 150 Single AC/DC Power Supply Docking Station w/ Manual (Requires RF-5833-H Amplifier **User Supplied**)

PTS Part No. PAC.TXC.001
Description: Transit Case

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

RF energy is present near the antenna during transmission. During low power operations 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.

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

Power Supply Docking Station (PSDS) Description

PTS Expeditionary Communications (PTS) has developed a rugged, lightweight, user-friendly power supply docking station (PSDS) for tactical radios. The PSDS provides the capability to operate the radio in a continuous, efficient, and 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 in the use of the radio 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, technical and maintenance facilities, training sites, deployment and staging checkpoints, remote control operations and forward operation bases.

The PSDS provides the user the capability to use their radio while reducing power requirements, soldier workload and logistical support needs.

The PSDS provides the optimum solution for combat support operations requiring continuous, uninterrupted, reliable communication when AC and/or DC power is available.

Physical Dimension

PSDS Dimensions: 13.6" D x 6.5" Hx 11.5" W(35cm x 17cm x 29cm)
PSDS Weight: 10 lbs. (4.5 kg)

PSDS + Case: 19.5" D x 15.5" H x 25.75" W (49.53cm x 39.37cm x 65.41cm)
PSDS + Case : 33 lbs. (15 kg)

Specifications

- Docking position for 1 RF-5833-H Power Amplifier
- 24/7/365 radio operations
- 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
- Built-in voltage surge protection
- Rugged, self contained system packaged in mil-spec transit case
- Environmental operating range:
  Temp: -20° to 70° C
  Relative Humidity: 5% to 95%
- Illuminating LED “Power-On” rocker switch
- Illuminating “Active Network” green LED indicator
- Illuminating LED “Radio” indicates AC (green) / DC (amber) power input
- High fidelity integral speaker
- Volume control knob with speaker on/off
- Supports one remote LS-671 speaker
- Auto switch over AC to DC power

User Educational Requirements

Prior to use of the PSDS, the user should have completed the Harris Operators Course. The user should have a thorough understanding of Harris operations and a basic understanding of the AN/PRC-150 (AN/PRC-160) and RF-5833-H power amplifier set-up and configurations.

Basic PSDS Set-Up

Government Furnished Equipment - GFE
RF-5833 power amplifier
PA Control Cable (10535-0720-B17)

Radio Assembly Installation

Facing the PSDS take one RF-5833-H and insert 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 connector on the radio and to radio connector on the PSDS. The Handset is attached to the MIC on the PSDS as shown on the photo below.

Basic PSDS Set-Up

Radio Assembly Installation (Continued)

Attach the CAB.DPW.001 Power cable to the back of the PSDS, Power Out Connector and the RF-5833-H 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 Part No. ANT-PTS-305150-1-1 works well with this system.) Connect the antenna connector to the installed amplifier, or if need, connect to the low pass filter output. Then connect the low pass filter input to the output of the amplifier. The user needs to place the antenna 100 feet away from the PSDS using the LMR-400 antenna cable. Attach the appropriate hand-set. 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

Facing the PSDS you will see one “POWER ON-OFF” rocker switch mounted on the front enclosure. Turn the switch to the on position (it will illuminate). The radio 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 radio 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 cable must be attached as seen earlier. The volume on the radio must be on at least mid-range for the volume on the AS0150-HR-5833 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 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 thru the speaker. When required, the user may turn down the NET using the volume knob.

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

PSDS Operation (Continued)

DC POWER OPERATION

The PSDS will also operate using DC power. DC power is provided to the system via the one standard DC power connectors labeled “DC In 20-33 VDC” located on the rear of the PSDS. This connector uses the standard L3Harris power cable (example: CX-13303). Any DC source 20-33 volts can be used to operate the system. It will also operate using PTS Inc’s Expeditionary Power System with batteries (see PTS Products Page). Circuitry in the PSDS will auto switch from AC to DC operation when AC power is lost. The PSDS will perform this function with no disruption in the operation of the radio. When AC power is established again, operation will default to the AC power, preserving the DC/battery power for secondary use.

LS-671 External Speaker Operation

The PSDS provides for the use of an external LS-671 for the radio net. There is one 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. Care should be taken to ensure the cable is connected correctly. One end is marked for the speaker; therefore take care to connect correctly.

Periodic Maintenance

Maintenance Safety Notice

Power down the radio and disconnect (unplug) the PSDS power from all power sources prior to the performance of any maintenance actions.

Air Filter Maintenance

On the bottom of the system you will find one fan cover that has a filter. Depending on the environment the filter will need periodic cleaning. Included with the PSDS are several replacement filters. When replacing the filter, wash the filter 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.

Periodic Maintenance (Continued)

Filter Removal Process:

- Turn the system onto its rear/back
- Snap the cover holding the filter assembly off from the bottom of the chassis
- Remove the filter
- After cleaning the dirty filter or replacing a worn filter, insert the clean or new filter on the assembly and snap the retainer back onto the filter frame
- Replace the assembly in the PSDS and snap the cover back in place
- It is recommended that the unit not be run without a filter to prevent internal damage

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, soapy water solution. Wipe with a damp towel and dry with a clean towel. Do not use abrasives or oil-based cleaners. Particular 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

System Repair or Return

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

Label the package/case as follows:

PTS Expeditionary Communications
RMA # (contact PTS for RMA assignment)
1318-B Putman Drive
Huntsville, AL 35816
Attention: Repairs

Warranty

PTS warrants all Power Supply Docking Stations (PSDS) to be free from defects in material and workmanship for a period of thirty-six (36) months from the date of shipment. PTS shall not be obligated to repair or replace a PSDS if it becomes damaged by unauthorized maintenance or repair, incorrect operational set-up, abuse, or neglect.

PTS shall bear the domestic transportation costs to/from the PTS facility when a PSDS is returned within the warranty period, OCONUS shipping will be the responsibility of the user.

Products sold by but not manufactured by PTS will be covered by the Original

Contact Information

For inquiries concerning this manual, technical difficulties, or operational problems with the PTS PSDS please reach out using the below information:

PTS Expeditionary Communications

Attn: Support
1318-B Putman Drive
Huntsville, AL 35816
Toll Free 1-877-737-5832
Commercial 256-539-6787
E-mail support@pts-inc.com

PTS Products

Power Supply Docking Stations

Provides immediate power to tactical radios. Worldwide automatic voltage range: 85-260 VAC, 47-440 Hz, 20-33 VDC. High-fidelity built-in speaker. Low-SWaP solution with no assembly or training required. Additional radios covered (but not limited to):

AN/PRC-1523	AN/PRC-117F	AN/PRC-117G
AN/PRC-152A	AN/PRC-162	AN/PRC-167
AN/PRC-158	AN/PRC-PSC-5	AN/PRC-150

ANT-PTS-000150-2-1

Raven HF 150W Antenna

Horizontally polarized folded dipole antenna for Near Vertical Incidence Skywave (NVIS) 0-2,000 miles HF communications. Full spectrum 1.8—30 MHz broadband coverage. Eliminates the need for a tuner, coupler, or grounding rod. Easy deployment in less than 5 min.

ANT-RTL-307005-1-1

7m Integrated Antenna Mast (IAM

VHF (30-88 MHz) and UHF (225-512 MHz) integrated into a single dual-band mast. Fast, compact, lightweight, and effective solution for dismounted communications. By using an additional secondary collar the system is capable of using the Raven HF 150W antenna, creating a tri-band solution.

E-Kit™

PTS Expeditionary Kit

A rapidly deployable system with a setup time of under 15 minutes. Includes a self-contained power source that allows over 80 hours of use before requiring AC or DC charging. Solar panels and cables are included. Scalable to mission requirements. Intuitive operations with minimal training required.