

PTS E-Kit™ User Guide for AN/PRC-150 E-Kit™



Table of Contents:

1. E-Kit™ Major Items List
2. PSDS Overview & Parts List
3. Power Source Part List
4. Antenna System VHF/UHF Parts List
5. Antenna System HF Parts List
6. HF Antenna Setup
7. Interconnection Diagrams
8. Concept of Operations & Best Practices
9. Maintenance, Warranty & Contact Information

Failure to follow all instructions and guidance provided in E-Kit™ system manuals may result in system failure and/or personnel injury. It is highly recommended for all personnel to review all instructions and warnings when employing E-Kit™ systems and components prior to operations.

For additional guidance in setup and operations, please reference the full manuals contained within the kit.



Parts List / Major End Items



E-Kit™ ITEM #	QTY PER KIT	PART NUMBER	DESCRIPTION
1	1	AS0150-HR-150	Harris 160 Single AC/DC Power Supply Docking Station w/ Manual Antenna - HF Dipole 150W Expeditionary Broadband
2	1	ANT-WWS-000101-2-1	(2-30 MHz)
3	1	ANT-RTL-307005-1-1	Antenna - IAM D - 7m 3" (Dual Band: 30-88 & 225-512 MHz) - Multicam
4	1	ACC-RTL-002105	Secondary Collar - 3" - Used with Single Tube Mast (Not Pictured)
5	1	CAB.OTH.101	Cable - LMR 400, 100'
6	1	PWR-BTR-00203	Power Source, UPS, 6-PK Tan Bay
7	6	PWR-BTR-00103	Battery, Li-ion, BB-2590, 294WH
8	1	CAB.APW.101	Cable - AC Input for 6 PK DC Power Source
9	1	CAB.DPW.101H	Cable - Harris Straight 6 PK DC Power Source to PSDS
10	1	PWR-BTR-12001	120W Solar Charging Panels (2 Panels per Set, Deluxe Kit Only)
11	1	CAB.APW.102	Cable - DC Solar Charging Output to 6 PK Power Source (Deluxe Kit Only)
12	1	CAB.APW.102E	Cable - Solar Charging Extension 8' (Deluxe Kit Only)
13	1	ACC-SLY-01230	Single Sided Headset w/ Noise Canceling Microphone
14	1	PAC.TXC.101	Transit Case w/ Foam – Large (Not Pictured)
15	1	PAC.TXC.106	Transit Case w/ Foam – Medium (Not Pictured)

Power Supply Docking Station (PSDS)



#	Qty	PSDS Components
1	1	AS0150-HR-150 (PSDS)
2	1	110V AC PWR Cable
3	1	Audio Jumper – J3

1. AS0150-HR-150
PSDS for AN/PRC-117G Tactical Radio



2. 110V AC PWR Cable



3. Audio Jumper



AS0150-HR-150 shown with unit supplied radio and accessories



#	AS0150-HR-150 Rear Ports
1	120-240VAC PWR Input
2	24V DC PWR Input
3	TOCNET Port, See manual
4	LS-671 Remote Audio, See manual
5	J9 Digital Port, See manual

For additional guidance in setup and operations, please reference the full manuals contained within the kit.

Power Source & Solar Kit



1. PWR-BTR-00203

24V DC PWR Source with AC PWR Cable Connected



2. CAB.DPW.101H



3. CAB.APW.101



6. PWR.BTR.12001



4. CAB.APW.102



5. CAB.APW.102E

#	Qty	Power Source Components
1	1	PWR-BTR-00203, 24VDC Power Source
2	1	CAB.DPW.101S, SINCGARS Straight Power Source to PSDS
3	1	CAB.APW.101, 110V AC PWR Cable
4	1	CAB.APW.102, Solar Input Cable (Deluxe Kit Only)
5	1	CAB.APW.102E, Solar Input Cable Extension (Deluxe Kit Only)
6	2	PWR.BTR.12001, 120W Solar Panel Kit (Deluxe Kit Only)
7	6	Battery, Li-ion, BB-2590, 294WH (Not Pictured)

For additional guidance in setup and operations, please reference the full manuals contained within the kit.

Antenna System – VHF/UHF



1. ANT-RTL-307005-1-1



2. Top Collar



3. Secondary Collar



4. Base Cap



5. VHF Connection Cable



6. UHF Connection Cable



7. Guy Ropes



8. Guy Wire Stakes (Rock Pegs)



Antenna System
Shown Bagged

#	Qty	ANT-RTL-307005-1-1 Antenna Components
1	1	ANT-RTL-307005-1-1 7m 3" VHF/UHF Integrated Antenna Mast System
2	1	Top Collar
3	1	Secondary Collar
4	1	Base Cap
5	1	VHF Connection Cable (BNC Female Connection)
6	1	UHF Connection Cable (TNC Female Connection)
7	6	Guy Ropes (3 per Top and Secondary Collars)
8	9	Guy Wire Stakes (Rock Pegs)

WARNING:
Failure to use the included VHF/UHF connection cables as feedline strain relief will cause system failure.

For additional guidance in setup and operations, please reference the full manuals contained within the kit.

Antenna System – HF



1. Balun



2. RF Load



3. Antenna Half



4. Tie Downs



5. Hoist Rope



6. Antenna Feedline



7. Radial Set



Antenna System
Shown Bagged

#	Qty	ANT-WWS-000101-2-1 Antenna Components
1	1	Balun (150W AVG, Type N Female Connector)
2	1	RF Load
3	2	Antenna Half
4	2	Tie Downs
5	1	Hoist Rope with Throw Weight
6	1	Antenna Feedline (Type N to BNC Male)
7	1	Radial Set

For additional guidance in setup and operations, please reference the full manuals contained within the kit.

HF Antenna Setup

The 7m Integrated Mast Antenna system (IAM-D, pn. ANT-RTL-307005-1) provides an excellent mounting solution to deploying the E-Kit included HF antenna system. This combination of antenna systems provide a multiband antenna field that is both quickly erected and has a small footprint. Both antenna systems must be installed using the user provided instruction manuals. Additional instructions for using the IAM-D as a masting system is contained within this document.

HF antenna to IAM-D integration steps:

1. Install the included secondary collar approximately 1' below the IAM top collar (Figure 1). Using the secondary collars lanyards, install included D-ring (or equivalent) then feed the hoist rope thru the D-ring (Figure 2). Secure the hoist rope to ground stake at the base of the IAM-D. This step should be completed while erecting the IAM-D after the top cap is installed. This configuration will provide a pulley system that will allow the HF antenna system to vary in height as required.
2. Once the IAM-D is fully erected and guy lines are tensioned, attach the HF antenna load and balun to the hoist rope with supplied snap links (Figure 3). Ensure that the HF antenna can be cleanly pulled up by the hoist rope.
3. Attach the two wire antenna segments to the load/balun assemblies and supplied feedline per the HF antenna system manuals (Figure 4).
4. Hoist the assembled HF antenna to the required height based on mission requirements (for additional information on antenna configurations, please reference the supplied manual) and carefully route and secure the extended HF wire antenna segments to avoid interference with the IAM-D guy lines. Once the HF antenna is hoisted to the appropriate height, secure the pull side of the hoist rope to a ground stake or similar item ensuring the HF antenna will not fall.



Figure 1



Figure 2



Figure 3



Figure 4

E-Kit™ Interconnect Diagram



Power Source connected to optional solar panels
(Note: Power Source can support up to 3 solar panels)



Power Supply connected to PSDS 24V DC Inputs.
(Shown with CAB.DPW.101H connected)

Typical field setup for Field Operations



TOC Area
Power Source & PSDS connected with
100' feedline (CAB.OTH.101)

Antenna
>75' from TOC

PTS E-Kit™ Concept of Operations & Best Practices

The PTS Expeditionary Kit (E-Kit™) for Tactical Radios is a self-contained ancillary kit that supports tactical communications in a light-weight, easily usable package. The E-Kit™ contains the following: 1. Power Supply Docking Station (PSDS) that mounts the radios and supplies regulated power and audio outputs; 2. Power Source that can provide two amplified radios power for multiple days and can be recharged via AC, DC or solar inputs; and 3. lightweight antenna systems tuned for High Frequency (HF) communications.

The E-Kit™ components are connected per instructions in this user guide and further information may be gained by review of the provided manuals for each component contained within the kit. The E-Kit™ components do not change the basic functions of the tactical radio systems and will not interfere with tactical communications with respect to COMSEC, range or functionality. The PTS E-Kit™ is meant to augment the currently fielded tactical radio mounts, power sources and antenna systems. The E-Kit™ may be combined with currently fielded ancillaries as needed by the end users' requirements.

The E-Kit™ components are designed for operation in austere environments. The power source and antenna systems are waterproof but the PSDS, due to its design, must be protected against direct water intrusion or immersion. The PSDS and antenna systems are designed for operations at the halt and not designed for usage in vehicle systems or to replace installed vehicle installation kits. Standard protections against RF and other electrical hazards should be employed per regulatory guidance. Antenna systems should be employed using local guidance and regulations with regard to personnel safety.

The E-Kit™ is designed to be employed by a minimum of 2 personnel. Using less personnel than recommended may cause system damage and/or injury to personnel. E-Kit™ transportation cases may weigh in excess of 100lbs and are considered to be a “two man” lift.

The E-Kit™ is employed by first determining the best footprint for the system based on the maximum cable lengths between the PSDS, power source and antenna system. The included 100' LMR400 feedline will yield approximately 95' of separation, it is recommended to separate antenna systems to reduce the likelihood of interference. The E-Kit™ includes specified feedline for the antenna system, usage of other cable may reduce performance and/or cause damage to the antenna. If solar charging is the primary method of resupplying power, additional planning will be required based on the length of the solar charging cables and extensions.

The E-Kit™ power source is recommended to be fully charged prior to operation. The power source may be charged via AC or DC power with the batteries installed, or the batteries may be removed and charged with approved bulk charge systems. Using the two solar panels included in the Deluxe Kit on a sunny day, the system may be fully charged within 8 hours. The power source will provide 24VDC power with a minimum of 2 batteries (1 battery per bank) and the batteries may be swapped while the system is operational. When connected to AC power, the power source will act as a universal power supply (UPS) should external AC power be lost. Additional charging and output options are available, please see manual for full capabilities and options.

Failure to follow all instructions and guidance provided in E-Kit™ system manuals may result in system failure and/or personnel injury. It is highly recommended for all personnel to review all instructions and warnings when employing E-Kit™ systems and components prior to operations.

Maintenance Information

PTS E-Kit™ components are COTS (commercial off-the-shelf) Class IX equipment and maintenance beyond general cleaning is not authorized. Refer to the component specific manuals for user level cleaning/maintenance practices. The Original Equipment Manufacturer (OEM) is the depot level for repairs; if an individual component fails or becomes damaged, please contact PTS for troubleshooting and further instructions.

Warranty Information

PTS warrants all power supply docking stations and transit cases furnished under contract are free from defects in material and workmanship and will conform to all requirements of the contract. **The PTS PSDS warranty shall be for a period of thirty-six (36) months from the date of the receipt by the user.** Products sold by but not manufactured by PTS will be covered by the Original Equipment Manufacturers (OEM) warranty policies and procedures.

Contact Information

Replacement manuals, user guides and other documentation for each PSDS and E-Kit™ is available on the PTS Website, www.PTS-INC.com.

For additional information or help, contact PTS Sales
sales@pts-inc.com or call (256) 539-6786 or 1 (877) 737-5832.

For repairs or replacement parts, contact PTS Support
support@pts-inc.com or call (256) 539-6786 or 1 (877) 737-5832.

