

RF-7800M



RF-7800M-MP APPLICATIONS GUIDE





Contents



RF-7800M-MP 3

 Mode Descriptions 4

 Tactical Networking 4

 Vehicular Amplifier Adapters 6

 Manpack and VAA Bill of Materials 6

 Additional Mounting Hardware 8

 Accessories 9

SATCOM On-the-Move 15

 BGAN Bill of Materials 16

 BGAN Accessories 17

Specifications

 Manpack Specifications 46

 BGAN Specifications 49



Dismounted Configurations

 Manpack Antenna Configurations 18

 Manpack Data Configurations 20

 Manpack Speaker Configuration 25

 Land Portable BGAN Configurations 26

Vehicular Configurations

 Manpack Vehicular Antenna Configurations 30

 Manpack Vehicular Data Configurations 36

 Manpack Vehicular Speaker Configurations 39

 Manpack Vehicular Power Supply Configurations 41

 Land Mobile BGAN Configurations 43

TECHNICAL SUPPORT

Technical support is available by:

- » Telephone: (585) 242-3561
- » Toll Free: (866) 264-8040
- » Fax: (585) 242-4483
- » Email: rfcsrv@harris.com
- » Web: www.rfcomm.harris.com/support




// FIII RF-7800M-MP MANPACK

SOFTWARE-DEFINED RADIO INNOVATION

The Harris Falcon III® series of radio products are designed using the Software Communications Architecture (SCA), offering the optimal transition to software-defined radio (SDR) technology with new levels of waveform flexibility.

Interoperable with legacy and Falcon II® radios, the new Falcon III family contains several times the processing power of prior radios. Aggressive internal power management techniques allow single-battery power with increased operation time. Narrowband and wideband waveforms are built in, and high-power vehicular amplifiers are available to complement the portability of the radios.

The newest member of the Falcon III family, the RF-7800M-MP, provides unrivaled performance in a manpack radio. Designed for the networked battlefield, the RF-7800M-MP provides reliable on-the-move networking of high-bandwidth voice, video and data.



- SOFTWARE-DEFINED
- SCA V2.2
- MOBILE AD-HOC NETWORKING
- 30 MHZ TO 2 GHZ FREQUENCY RANGE
- HIGHER DATA RATES
- PROGRAMMABLE CRYPTO

RF-7800M-MP

The RF-7800M-MP is a wideband tactical radio for on-the-move networking that provides secure Internet Protocol (IP) data to the tactical Internet at on-air rates of up to 5 Megabits per second (Mbps). The RF-7800M-MP single-channel radio is 30% smaller and 35% lighter than the currently fielded manpack radios, operating from a single standard battery that further reduces the weight of this dismantled radio.

With a broad range of multiband, multimission capabilities, the RF-7800M-MP covers 30 MHz to 2 GHz and transmits at up to 10 watts VHF and 20 watts UHF. It incorporates the Harris Advanced Networking Wideband Waveform (ANW2), with a dedicated channel to handle true Combat Net Radio (CNR) voice to ensure voice communication is never lost—even if your IP network goes down. The RF-7800M-MP also incorporates VHF/UHF AM and FM line-of-sight voice and data communications modes. SCA-based waveforms can be ported into the radio to support country-unique interoperability requirements, including unique encryption requirements.

The RF-7800M-MP utilizes the Harris Acropolis™ II software-programmable encryption module. The radio supports 28- and 256-bit AES encryption modes and can store multiple mission plan files, extending the time between reconfigurations.

An embedded GPS receiver is included in the RF-7800M-MP to display local position and to provide automatic position reporting for situational awareness on the battlefield. The radio also features three separate antenna connections to allow efficient and flexible use of antennas.

The RF-7800M-MP includes:

- » Receiver/Transmitter
- » H-250/U-Type Handset
- » Radio Programming Application (RPA) CD
- » USB Programming Cable
- » Operator's Manual
- » Quick Reference Guide

Features

- » 30 MHz to 2 GHz frequency range
- » 1.2 MHz and 5 MHz wideband channel bandwidths
- » SCA v2.2 operating environment
- » Advanced Networking Wideband Waveform (ANW2)
- » Narrowband 10 watts output power
- » Wideband 20 watts peak output power
- » VHF/UHF FM/FSK
- » UHF AM/ASK
- » Acropolis II Programmable Cryptographic Module
- » Internal AES encryption
- » Radio Programming Application
- » External Keypad/Display Unit (KDU) support
- » QuickLook 1A/2 (Q4 CY'10)
- » Citadel Encryption (Q4 CY'10)



MODE DESCRIPTIONS

ADVANCED NETWORKING WIDEBAND WAVEFORM (ANW2)

The Advanced Networking Wideband Waveform (ANW2) is an ad-hoc (self-forming and self-healing), IP-based, UHF LOS, wideband wireless network waveform that meets fixed and mobile communications needs on the battlefield. ANW2 employs Harris' world-class physical layer modem technology coupled with industry-proven ad-hoc technologies to provide unsurpassed connectivity in urban combat scenarios. Ad-hoc technologies seamlessly allow data connectivity "around corners" to provide soldiers with the most accurate common operational picture of the immediate battlespace.

ANW2 features:

- » Self-forming, self-healing, decentralized mesh network
- » High throughput (5 Mbps), long range, seamless data routing
- » Adaptive data rate
- » Internal AES 256-bit encryption
- » AES integrated TRANSEC cover
- » Combat Net Radio quality voice over MELP with simultaneous data
- » Cursor on Target, C2PC, streaming video, IP applications

Although ANW2 is primarily applicable in the mobile, ad-hoc urban warfare environment, it can be used to achieve a high data rate wide pipe for point-to-point applications like streaming video, and ensures immediate, robust voice communications at all times.

ANW2 Specifications	
Frequency Range	225-2000 MHz
Battery Life	10–11 hours typical
Node Support	Point-to-point & mesh topologies
Net Formation (mesh)	<20 sec
Net Join	<5 sec
On-Air Data Rate	Auto-adaptive, up to 5 Mbps
Range	2 km (urban) to 40 km (clear LOS)
Range Extension	Automatic multi-hop data capability
Routing Protocol	Layer 2 link state routing
On-Air Waveform	Highly robust burst modem Selectable 1.2 MHz, 5 MHz bandwidth Narrowband interference excision AES-256 cover/link protection
Voice Relay	Up to 4 Hops

VULOS (VHF/UHF/LINE-OF-SIGHT)

Line-Of-Sight (LOS) and Beacon

The RF-7800M-MP can be programmed manually or via RPA with up to 99 system presets, including LOS or Beacon data. The radio can be configured to support multiple COMSEC types and modulations per waveform.

TACTICAL NETWORKING

The RF-7800M-MP radio platforms are designed with future warfighters and future capabilities in mind. The radio features an SCA 2.2 operating environment, providing the optimal transition to SDR technology.

The RF-7800M-MP provides several times the processing power of currently fielded tactical radios to facilitate software upgradability well into the future. Features include: high-speed networked data; simultaneous video, situational awareness, and voice; mobile ad-hoc networking and integrated voice communications.

Capabilities

QUALITY SHARED SITUATIONAL AWARENESS

Today's soldiers need to know where they are, where their friends are, and where the enemy is at all times. Falcon III networking gives soldiers a common operational picture of the battlefield.

SUPERIOR BRIGADE-LEVEL COMMUNICATIONS

Current C4ISR capabilities are limited by networks with inadequate range and bandwidth, forcing subjective and manual prioritization of messages. Falcon III eliminates this problem by connecting every soldier and every vehicle into a powerful, seamless network.

ENHANCED SPEED OF COMMAND

Tactical deployments typically occur in hostile environments, putting a premium on the ability to make decisions quickly and change directions midstream.

IMPROVED DECISION-MAKING CAPABILITY

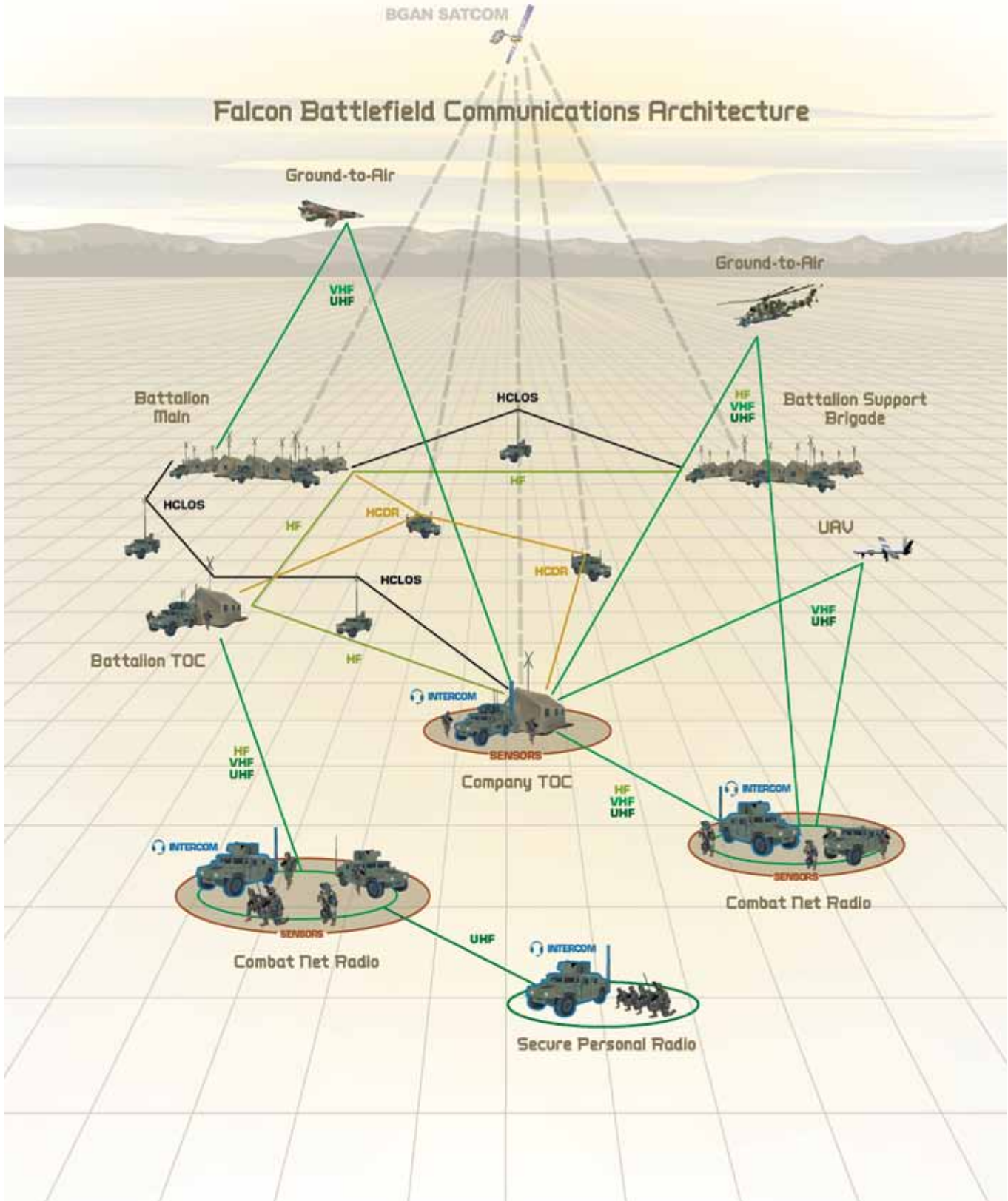
Quality of decision-making can make all the difference in the outcome of a mission. Higher quality, more complete information ensures timely and better decision-making.

FORCE SELF-SYNCHRONIZATION

See First. Understand First. Act First. Finish Decisively. This net-centric vision is predicated on shared situational awareness, maximizing operational flexibility and exploiting speed of command.

ENHANCED NETWORK MOBILITY

Offering a clear advantage over currently fielded systems, the RF-7800M-MP is designed for mobile tactical networks and enables agile decision-making.



VEHICULAR AMPLIFIER ADAPTERS

The Falcon III RF-7800M-Vxxx series products are 50-watt vehicular amplifier adapters (VAA) designed for long-range applications and increased communications reliability. The amplifiers are extremely low profile and deployable in multiple configurations, including a single-channel configuration (RF-7800M-V150), or a two-channel mounted configuration (RF-7800M-V250).

SINGLE CHANNEL CONFIGURATION



RF-7800M-V150

The RF-7800M-V150 comes equipped with a power amplifier (PA) and a Vehicular Interface Mount (VIM). The separately purchased RF-7800M-MP mounts securely within the PA.

The PA provides 50 watts output power from 30 to 450 MHz, supporting both narrowband and wideband waveforms, up to 5 MHz bandwidth. In addition, the amplifier provides between 20 and 50 watts output power from 450 to 512 MHz.

The PA features separate VHF, UHF, and wideband antenna ports with automatic port switching, providing the radio system with true multi-mission capability. The operator only needs to select the required preset on the radio to switch between ground, ground-to-air, and wideband networking communications. The PA includes VHF (30-90 MHz) and UHF (200-400 MHz) collocation filters, an internal LNA, wideband PA control interface, and auxiliary power output.

The VIM includes a shock mount and provides a DC input power connector, a DC output connector, VIC-1/VIC-3 interface, and DC speaker power connector. The VIM also features a mechanism to lock the manpack radio for physical security.

DUAL CHANNEL CONFIGURATION



RF-7800M-V250

The RF-7800M-V250 comes equipped with two power amplifiers, a shock mount and locking mechanism. The RF-7800M-MP manpack radios mount securely to the RF-7800M-V250 (radios not included with adapter). The power amplifiers are identical to the PA provided in the RF-7800M-V150.

MANPACK AND VAA BILL OF MATERIALS



RF-7800M-MP WITH ANCILLARIES KIT

	Product Number	Product Name	Qty
(A)	RF-7800M-MP	Multiband Receiver/Transmitter	1
(B)	12043-2750-A006	USB Programming Cable	1
(C)	12043-0870-A06	USB Host Mode Cable	1
(D)	RF-7800MM-SW001	Communications Planning Application CD	1
(E)	10075-1399	H-250/U Lightweight Handset	1
	10515-0334-4000	RF-7800M-MP ANW2 Pocket Guide	1
	10515-0334-4100	RF-7800M-MP Quick Reference Guide	1
	10515-0334-6000	RF-7800M-MP E-Pub CD	1
	10515-0334-4000	RF-7800M-MP ANW2 Pocket Guide	
	10515-0334-4100	RF-7800M-MP Manpack Reference Guide	
	10515-0334-4200	RF-7800M-MP Manpack Operation Manual	
	10515-0333-4200	FIII Vehicular System Installation/Maintenance Manual	

For antennas please see page 9.

RF-7800M-V120 20 WATT MULTIBAND VAA

	Product Number	Product Name	Qty
(V)	RF-7800M-PA120	20 Watt Power Amplifier	1
	12064-5005-03	VAA ANC Cable Kit	1
(F)	12050-3000-03	Shock Mount Assembly	1



RF-7800M-V150 50 WATT MULTIBAND VAA

	Product Number	Product Name	Qty
(E)	RF-7800M-PA150	50 Watt Power Amplifier	1
	12064-5005-01	VAA ANC Cable Kit	1
(I)	12064-5030-A1	MP to VAA HB Cable (N to N)	1
(J)	12064-5020-A1	MP to VAA LB Cable (TNC to BNC)	1
(F)	12050-3000-03	Shock Mount Assembly	1



RF-7800M-V250 DUAL 50 WATT MULTIBAND VAA

	Product Number	Product Name	Qty
(E)	RF-7800M-PA150	50 Watt Power Amplifier	2
	12064-5005-02	Dual VAA ANC Cable Kit	1
(I)	12064-5030-A1	MP to VAA HB Cable (N to N)	2
(J)	12064-5020-A1	MP to VAA LB Cable (TNC to BNC)	2
(K)	12053-6800-01	Shock Mount Interface Assembly (SIM)	1
(U)	MT-6352/VRC	SINGGARS Shock Mount	1



ADDITIONAL MOUNTING HARDWARE

BATTERY BOX / ELIMINATOR SHOCK MOUNT



RF-7871-VM001

The RF-7871-VM001 vehicular shock mount secures the RF-7800M-MP connected to a RF-5910-PS005 Battery Eliminator or a 12043-4800-01 Battery Box.

Dimensions: 5.12" H x 7.80" W x 12.50" D
Weight: 9 lbs.

DC POWER SHOCK MOUNT FOR MANPACK 9



RF-7871-VM002

The RF-7871-VM002 vehicular shock mount secures the RF-7800M-MP manpack powered by DC generated by the installation vehicle.

Dimensions: 5.12" H x 7.80" W x 12.50" D
Weight: 9 lbs.

ACCESSORIES

Kits

DISMOUNT KIT

RF-7800M-DK001

The Dismount Antenna Kit includes the items below:

Product Number	Product Name
RF-3152-AT152	VHF/UHF, 30-512 MHz Blade with Gooseneck Antenna
RF-3164-AT122	UHF Manpack WB, 225-450 MHz Antenna
RF-3150-AT152	VHF Manpack NB, 30-108 MHz Antenna
12006-0017-02	L1 Green Magnetic Mount GPS Antenna (6ft)
12043-4800-01	Battery Box*
10372-0349-01	Antenna Bag
10515-6446	Antenna Reference Card

*Order batteries separately.

VEHICULAR KITS

The following Vehicular Kits are available:

RF-7800M-VK001

Product Number	Product Name	Qty
RF-292-01	Antenna Mounting Kit	1
12006-0017-02	L1 Green Mag Mount (6ft) GPS Antenna	1
RF-3183-AT013	Vehicular Antenna 30-512 MHz	1
10369-7212-025	Coax Cable, BNC to BNC, (25ft)	1
10515-6446	Antenna Reference Card	1

RF-7800M-VK004

Product Number	Product Name	Qty
RF-292-02	Antenna Mounting Kit (Tan)	1
12006-0017-06	L1 Mag Mount (6ft) GPS Antenna (Tan)	1
RF-3183-AT012	Vehicular Antenna 30-512 MHz (Tan)	1
10369-7212-025	Coax Cable, BNC to BNC, (25ft)	1
10515-6446	Antenna Reference Card	1

Manpack Antennas

30-512 MHZ NARROWBAND MANPACK ANTENNA



RF-3152-AT152

The RF-3152-AT152 Multiband Antenna is a dismount 30 to 512 MHz linearly polarized monopole antenna. The performance of the antenna is comparable to Harris' 10369-0205 nightstick antenna. The 20-inch (approximately 50.8 cm) long, 12 oz. antenna connects directly to the low-band port of the RF-7800M-MP manpack radio via a TNC-style connector. The antenna incorporates a flexible gooseneck for orientation. Optimal performance is achieved when the antenna is deployed vertically and is mounted on the radio chassis. Color: Black

225-450 MHZ WIDEBAND ANW2 MANPACK ANTENNA



RF-3164-AT122

The RF-3164-AT122 is a dismount 225 to 450 MHz linearly polarized center-fed dipole antenna. The 22.5 inch (approximately 57 cm) long, 11 oz. antenna connects directly to the high-band port of the RF-7800M-MP manpack radio via an N-style connector. Optionally, the antenna can be removed from the radio connector and tethered to the radio or rucksack via a coaxial cable. The antenna incorporates a flexible blade gooseneck for orientation and a flexible blade radiator. By folding the blade, the stowed length of the antenna can be reduced to less than 16 inches (approximately 41 cm). Color: Black

30-108 MHZ NARROWBAND MANPACK ANTENNA

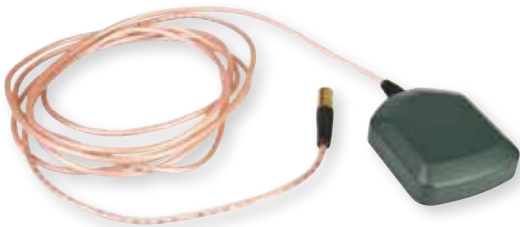


RF-3150-AT152

The RF-3150-AT152 VHF Antenna is a dismount 30 to 108 MHz linearly polarized end-fed monopole blade antenna. The 48.5 inch (approximately 123 cm) long, 8.7 oz. antenna connects directly to the low-band port of the RF-7800M-MP manpack radio via a TNC-style connector. The antenna incorporates a flexible gooseneck for orientation and a flexible sleeved blade radiator. By folding the blade, the stowed length of the antenna can be reduced to less than 17 inches (approximately 43 cm). Optimal performance of the antenna is achieved when the antenna is completely deployed and is mounted on the radio chassis. Color: Black

225-2000 MHZ WIDEBAND ANW2/ROVER MANPACK ANTENNA**RF-3165-AT122 (Shown Folded)**

The RF-3165-AT122 is a dismount 225 to 2000 MHz center-fed dipole antenna. The 22.5 inch (approximately 57 cm) long, 14 oz. antenna connects directly to the high-band port of the RF-7800M-MP manpack radio via a N-style connector. Optionally, the antenna can be removed from the radio connector and tethered to the radio or rucksack via a coaxial cable. The antenna incorporates a flexible blade gooseneck for orientation. By bending the gooseneck at 90 degrees, the stowed length of the antenna can be reduced to less than 17 inches (approximately 43 cm). Color: Black

L1 ACTIVE GPS, SOLDIER WORN ANTENNA**10511-0400-04 (Green)****10511-0400-05 (Tan)**

The 12006-0017-02 is an active L1 GPS antenna. The assembly incorporates an integrated 6-foot (~1.8-meter) long RG-316 cable and two magnetic mounts. The approximately 1.75 x 1.75-inch (4.5 x 4.5-centimeter) wide x 0.25 inches (0.7 centimeters) tall, 2.6-ounce (~73.7-gram), antenna incorporates bandpass filtering and a 33 dB gain, 2.7 to 5.5 VDC, active LNA. The coaxial cable has a custom straight SMB connector for attaching to RF-7800M-MP manpack radios. Comes with 6ft cable. Additional Lengths are available.

Vehicular Antennas**225-450 MHZ WIDEBAND VEHICULAR ANTENNA****RF-3184-AT320 (Green)****RF-3184-AT324 (Tan)**

The RF-3184-AT320 is a vehicular 225 to 450 MHz omni-directional center-fed single element dipole antenna designed for use with vehicular systems. The antenna assembly consists of two components: a black spring base and a fiberglass encased dipole radiator. The fiberglass radome mounts directly to the base. The assembly is 35 inches (approximately 89 cm) long and weighs 6.3 lbs. (approximately 2.9 kg). The antenna installs on the RF-292-01 universal antenna mount or on the standard mounting brackets found on most military vehicles or ships. The RF connector is Type-N female and the RF-3184-AT320's power rating is 100 watts. The complete package includes the antenna assembly and mounting hardware. Order the RF-292-01 or other mount separately for vehicular mounting.

Coaxial Cables

Product Number	Product Name
10369-7210-XXX	Coaxial Cable (RG213), N-to-N
10369-7211-XXX	Coaxial Cable (RG-213), N-to-BNC
10369-7212-XXX	Coaxial Cable (RG-213), BNC-to-BNC
10513-0811-AXXX	Coaxial Cable (CMR-400DB), N-to-BNC
12011-0120-AXXX	Coaxial Cable (RG-223), BNC-to-TNC

30-512 MHZ BROADBAND VEHICULAR ANTENNA



RF-3183-AT013 (Green)

RF-3183-AT012 (Tan)

The RF-3183-AT013 and AT012 antennas have a two-piece sectional vertical whip for use from 30 to 512 MHz. Exceptional bandwidth is obtained from distributive passive components along the antenna's 110-inch (approximately 2.8 meters) length. The RF-3183-AT013 has equivalent gain to narrowband antennas and requires a ground plane. This antenna is the ideal choice for multiband radios because it reduces the vertical signature by replacing two narrowband antennas with a single antenna. The antenna comes with a dual BNC port. The feed-through spring base mounts directly to the RF-292-01 antenna mount.

500-2000 MHZ DUAL UHF/L-BAND VEHICULAR DIPOLE ANTENNA



RF-3186-AT320 (Green)

RF-3186-AT324 (Tan)

The RF-3186-AT320 is a vehicular 500 to 2000 MHz omni-directional center-fed single element dipole antenna designed for use with vehicular systems. The antenna assembly is delivered with a fiberglass encased dipole radiator mounted to a black spring base. The assembly is 40 inches (approximately 101.6 cm) long and weighs 6 lbs. (approximately 2.7 kg). The antenna installs on the RF-292-01 universal antenna mount or on the standard mounting brackets found on most military vehicles or ships. The RF connector is Type-N female and the RF-3186-AT320's power rating is 100 watts. The complete package includes the antenna assembly and mounting hardware. Order the RF-292-01 or other mount separately for vehicular mounting.

30-2000 MHZ DUAL UHF/L-BAND VEHICULAR DIPOLE ANTENNA



RF-3187-AT320 (Green)

RF-3187-AT324 (Tan)

The RF-3187-AT3XX is a vehicular 30 to 2000 MHz omni-directional single element dipole antenna designed for use with vehicular systems. The antenna assembly is delivered with a dipole radiator mounted to a black spring base.

The assembly is 85 inches (approximately 215.9 cm) long and weighs 13 lbs. (approximately 5.91 kg). The antenna installs on the RF-292-01 universal antenna mount or on the standard mounting brackets found on most military vehicles or ships. The RF connectors are Type-N (550-2000 MHz) BNC (108-512 MHz) and BNC (30-88 MHz) and the RF-3186-AT3XX's power rating is 100 watts on all three bands. The complete package includes the antenna assembly and mounting hardware. Order the RF-292-01 or other mount separately for vehicular mounting.

Antenna Accessories

FALCON III ANTENNA BAG



10372-0349-01 (Green)

10372-0349-02 (Tan)

This antenna carrying bag is sectionalized into several pockets to store five antennas used with the Falcon III manpack radio and the radio handset. Labeled pockets are provided to accommodate the RF-3150-AT152 VHF Dismount Antenna, RF-3151-AT152 UHF Dismount Antenna, RF-3164-AT122 UHF Dismount Antenna, RF-3165-AT122 UHF Dismount Antenna and RF-3070-AT242 Soldier L1/L2 GPS Antenna.

Cables

Product Number	Product Name
12043-2750-A006	USB Programming/Upgrade Cable
12043-2710-A006	PPP SA Cable
12043-2730-A006	Remote/Data 'Y' Cable
12043-2740-A003	Digital Retrans Cable, 3 ft.
12043-2740-A006	Digital Retrans Cable, 6 ft.
12043-2740-A050	Digital Retrans Cable, 50 ft.
12043-2760-A006	Red Side Ethernet Cable (J3) for ANW2
12006-4241-A006*	GPS Cable, 6 ft. (~2 m)
12043-0820-A015	Unterminated Cable (J3), 15 ft.
12043-0839-A010	INE (J6) to RJ-45, 10 ft.
12043-0838-A006	FIII MP Black (J6) to FIII Black (J6), 6ft.

* Additional lengths available.

Batteries

NON-RECHARGEABLE, DISPOSABLE LITHIUM



BA-5590/U

The BA-5590/U is a lightweight disposable long-life battery for use with the Falcon III manpack radio sets. It provides approximately three times the operation life of the BB-590/U Rechargeable Nickel-Cadmium Battery. The BA-5590/U cannot be recharged. Recommended for use in temperatures exceeding 55 degrees Celsius (131 degrees Fahrenheit). Color: Green

NON-RECHARGEABLE LITHIUM MANGANESE DIOXIDE



BA-5390/U

The BA-5390/U is a lightweight disposable, long-life battery for use with the Falcon III manpack radio sets and sensor systems. It provides up to 50% more operating time than a BA-5590/U. This battery cannot be recharged. Color: Green

RECHARGEABLE NICKEL METAL-HYDRIDE



BB-390B/U

The BB-390B/U is a high-capacity, rechargeable, nickel-metal hydride battery that provides about 200% more capacity than a BB-590/U for manpack radios. The BB-390B/U has an integrated battery life indicator. This battery is not recommended for use above 60 degrees Celsius (140 degrees Fahrenheit). Color: Green

RECHARGEABLE LI ION



BB-2590/U

The BB-2590 type battery is a very high-capacity, rechargeable, Li Ion battery for the RF-7800M-MP that provides up to 300% the energy density and 275% of the capacity of the BB-590/U. It is the same physical size, but is about 20% lighter than the BB-390 and BB-590 batteries. The battery has a built-in battery life indicator. Use with Harris RF-5058-CH002 or RF-5058-CH006 Battery Chargers. Color: Tan

Battery Chargers

TWO-BAY CHARGER/CONDITIONER



RF-5058-CH002

The RF-5058-CH002 Battery Charger/Conditioner is a two-bay battery charger for the BB-390/U NiMH and BB-2590/U type Li Ion batteries. Indicators display the charge or conditioning status of each bay. The charging and conditioning cycles are automatic and terminate when complete. Typical charge time varies with temperature, battery type, and age, but ranges from 2.5 to 6 hours. The Charger/Conditioner is waterproof when closed for transportation or storage. Operation is intended for a controlled environment. The Charger/Conditioner accepts both AC and DC input voltages (DC 12 to 36 VDC, AC 95 to 260 VAC, 47 to 440 Hz). The Charger/Conditioner includes an operator's manual, DC power cable with attached alligator clips, and US NEMA 5-15P, European CEE 7/7, and UK power cords. Color: Black

SIX-BAY CHARGER/CONDITIONER



RF-5058-CH006

The RF-5058-CH006 Battery Charger/Conditioner is a six-bay battery charger for the BB-390/U NiMH and BB-2590/U type Li Ion batteries provided by Harris. Indicators display the charge or conditioning status of each bay. The charging and conditioning cycles are automatic and terminate when complete. Typical charge time varies with temperature, battery type, and age, but ranges from 2.5 to 6 hours. The Charger/Conditioner is waterproof when closed for transportation or storage. Operation is intended for a controlled environment. The Charger/Conditioner accepts both AC and DC input voltages (DC 12 to 36 VDC, AC 95 to 260 VAC, 47 to 440 Hz). Charger/conditioner is provided with an operator's manual, DC power cable with attached alligator clips, and US NEMA 5-15P, European CEE 7/7, and UK power cords. Color: Black

Battery Eliminator



RF-5910-PS005

The RF-5910-PS005 AC/DC Battery Eliminator provides a regulated output voltage to Falcon III Manpack transceivers from an AC input range of 85-270 VAC/47-440 Hz and a DC input range from 9.0 to 34.5 VDC. The unit includes a rechargeable backup battery, with instantaneous switch-over if both the AC and DC inputs fail or are disconnected. The backup battery enables radio operation for a minimum of 15 minutes at a 100% duty cycle. Switch-over to the backup battery occurs via a zero-wait switching feature that ensures transceiver operation is not disrupted.

The RF-5910-PS005 indicates operational status through the use of three indicators. These indicators display "AC ON," "DC ON," and battery status. It is used in place of the Falcon III Manpack battery box. The unit is supplied with a six-foot DC power cable with alligator clips, a six-foot AC power cable with US NEMA 5-15P plug attached, a universal AC plug adapter and an operator's manual. The resulting system may be mounted for mobile operation.

Audio Accessories

LIGHTWEIGHT HANDSET—H-250/U (MODIFIED)



10075-1399

The 10075-1399 is a high-grade, lightweight military-grade handset for use with the Harris tactical radio systems. One handset is supplied with each RF-7800M. It is modified to provide improved operator RF protection. Cable has U-229B/U connector.

TACTICAL AMPLIFIER/SPEAKER



RF-5980-SA001

Amplifies transceiver audio output for vehicular and base station applications.

The RF-5980-SA001 includes dual six-pin handset/headset connectors, individual handset/headset and speaker volume controls. Also included are individual handset/headset and speaker power switches and a vehicular mounting bolt and bracket. The Amplifier/Speaker is ruggedized for operation in extreme environments per MIL-STD-810F.

The RF-5980 requires external 26 VDC power. Cables, nine feet (approximately 2.7 meters), from list below are needed:

Product Number	Product Name
10535-0706-A009	Speaker to four-pin military power connector
10535-0708-A009	Speaker to tinned leads
10535-0713-A009	Speaker to RF-5910 Battery Eliminator
10535-0713-A009	Speaker to RF-5833H Power Amplifier
10535-0707-A009	Speaker Audio Cable

LIGHTWEIGHT HEADSET



RF-3020-HSXXX

Harris offers a wide range of Light Weight Headsets that fit virtually any requirement. To find the headset specific to an application please reference the Harris Worldwide Product Catalog or speak with a Sales Representative.

Backpacks

FALCON III BACKPACK



RF-5935-CA001

This manpack radio bag for the RF-7800M-MP radio is designed for short duration, dismantled missions where communications on the move are essential. When unzipped from the rear while being worn, the back folds down, exposing the radio and up to four additional batteries. The radio is strapped inside the bag and the bag has holes in the top for deployment of the antennas, GPS Antenna, Keypad/Display Unit Remoting Cable, handset cable, and other accessory cables to pass through while the bag is closed for marching. An externally mounted, zippered compartment holds a ruggedized laptop computer.

Software

Product Number	Product Name
RF-7800M-SW001	Communications Programming Application (CPA)
RF-6760W	Wireless Message Terminal Software
RF-6705-SW001	Tactical Chat IP

Manuals

Product Number	Product Name
10515-0334-6000	RF-7800M-MP E-Pub CD
10515-0334-4000	RF-7800M-MP ANW2 Pocket Guide
10515-0334-4100	RF-7800M-MP Manpack Reference Guide
10515-0334-4200	RF-7800M-MP Manpack Operation Manual
10515-0333-4200	FIII Vehicular System Installation/Maintenance Manual
10515-0333-4300	RF-7800M-V150/V250 Intermediate Maintenance Manual.
10515-0334-4500	RF-7800M-MP Student Guide

Remote Accessories

REMOTE CONTROL



RF-7800R-RC003

The new Falcon III remote control unit provides remote support for voice, data, Ethernet and USB support using Field Wire (WD-1A), RS-449, Ethernet, and fiber interfaces. Allows for 3.5km of separation of radio and operator providing enhanced safety and transmission security.

FALCON III REMOTE KEYPAD DISPLAY UNIT



10553-0100-02

The Falcon III Remote Keypad Display Unit, for use with the Falcon III manpacks, provides a light weight lower cost alternative to the classic Falcon II KDU. The new KDU provides ambidextrous remote operation of the Falcon III manpacks in both dismount and vehicular settings. Included with the Falcon III Remote Keypad Display Unit is the 10553-1300-02 CARC Green KDU, the 10511-0704-012 6ft KDU Extension Cable and the 10553-1450-01 Wrist Strap (Black). Also for use with the Falcon II Family.

FALCON II REMOTE KEYPAD DISPLAY UNIT



10511-1300-03

The Falcon II Keypad Display Unit requires the 10511-0704-012 extension cable and interoperates with the Falcon III Manpacks providing the ability to remotely operate manpacks in both dismount and vehicular settings.

KDU GIMBALED MOUNT



RF-5940-MT001

The RF-5940-MT001 KDU Gimbaled Mount is used for remote mounting of the Keypad/Display Unit (KDU) from the Falcon II manpack radios. The mount can be used in vehicles or on a desktop and can be easily repositioned by loosening a thumbscrew, reorienting the KDU, and retightening the thumbscrew. The KDU is easily unlatched from the radio and latched to the Gimbaled Mount for installation. It is just as easily reattached to the radio for "jerk-and-run" operation.

REMOTE KDU EXTENSION CABLE

10511-0704-XXX

The Remote KDU Extension Cable is for use with the Falcon II and Falcon III Keypad Display Units and comes in a range of lengths from 6ft to 250 ft.

SATCOM ON-THE-MOVE

The Harris RF-7800B Broadband Global Area Network (BGAN) product line is a high-performance satellite solution that provides reliable voice and wideband data connectivity for beyond line-of-sight SATCOM-on-the-move and SATCOM-at-the-quick-halt applications. When used with the RF-7800M-MP manpack radio, the RF-7800B terminals provide BLOS range extension of data networking capabilities through simultaneous operation with the ANW2 waveform. The RF-7800M-MP provides the configuration & control of the BGAN terminals for ease of operation. When the RF-7800M-MP changes to a BGAN enabled net, a connection is automatically created by the RF-7800B to the Inmarsat network, providing a AES-encrypted IP data transfer capability that is automatically routed through either the LOS or BGAN satellite network. Embedded SCPS-TP compliant TCP/IP Acceleration provides increased throughput over the Inmarsat satellite link and interoperability with US DoD Gateways.

BGAN Terminals

LAND PORTABLE BGAN TERMINAL



RF-7800B-DU024

The RF-7800B-DU024 is a land portable, Class 2 BGAN terminal. Small in size, it is meant for SATCOM-on-the-Quick-Halt (SOQH) at the dismount level, or fixed site applications. The antenna is manually pointed towards the satellite to establish connection with the Inmarsat network. The user can use either an audible setting that provides steering tones that indicate signal strength, or the embedded web-based Man-Machine Interface (MMI) to view signal strength. Once active, Inmarsat provides data rates of up to 432 kbps.

LAND MOBILE BGAN TERMINAL



RF-7800B-VU104

The RF-7800B-VU104 is a land mobile, Class 10 SOTM BGAN terminal. Meant for vehicular SOTM applications, the RF-7800B-VU104 provides continuous satellite tracking and connectivity as it moves at data rates up to 492 kbps. The SOTM antenna is permanently mounted on a vehicle, providing uninterrupted network connectivity while traveling at speeds of up to 70 Mph, vehicular velocity of motion up to 100 degrees per second in both azimuth and elevation, with simultaneous random pitch and roll.



BGAN BILL OF MATERIALS

RF-7800B-DU024 LAND PORTABLE BGAN (DISMOUNT)

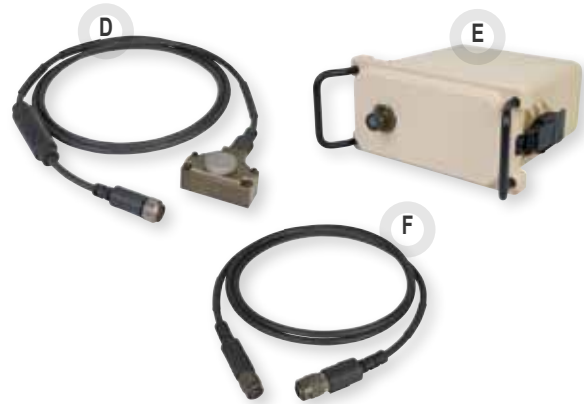
	Product Number	Product Name	Qty
(A)	12091-0020-10	Inmarsat Class 2 Land Mobile BGAN Terminal	1
(B)	12043-0844-A1	AC/DC Power Supply	1
(C)	12043-0833-A010	Standalone Ethernet Cable	1
	10515-0365-4200	Operation Manual for RF-7800B BGAN Terminal	1



FALCON III BATTERY BOX KIT

	Product Number	Product Name	Qty
	12091-0060-01	Land Portable DU024 Ancillary Kit	1
(D)	12043-0830-A006	FIII Manpack Black Ethernet Cable, 6 ft. (~2 m)	1
(E)	12091-4010-01	Battery Box* and Cover Kit	1
(F)	12043-0850-A006	Battery Box Cable, 6 ft. (~2 m)	1

* Battery sold separately. Please see page 17.



RF-7800B-DU024 MOUNTING HARDWARE

Product Number	Product Name	Qty
12091-4150-01	BGAN Land Portable Fixed Mounting Kit	1

RF-7800B-VU104 LAND MOBILE BGAN (VEHICULAR)

	Product Number	Product Name	Qty
(G)	12091-0040-10	Inmarsat Class 10 Land Mobile BGAN Terminal	1
(H)	12043-0843-A015	Automobile 12 VDC Power Cable	1
(I)	12043-0833-A015	Standalone Ethernet Cable	1
(J)	12091-4170-01	Pot Magnet Assembly	4
	10515-0365-4200	Operation Manual for RF-7800B BGAN Terminal	1



FALCON III MOBILE BGAN KIT

	Product Number	Product Name	Qty
	12091-0070-01	Land Mobile VU104 Ancillary Kit	1
	12043-0830-A015	FIII Manpack Black Ethernet Cable, 15 ft. (~4.6 m)	1
	12043-0840-A015	BGAN DC Power to 4 Leads/ RF-7800B-VU Remote On/Off Cable, 15 ft. (~4.6 m)	1
	F03-0008-906	In-Line Fuse Kit	1
	F15-0012-003	Fuse, Automotive Blade, 5A/32 V	1

BGAN ACCESSORIES

DATA CABLES

Product Number	Product Name
12043-0830-A006	FIII MP Black Ethernet Cable, 6 ft. (~2 m)
12043-0830-A015	FIII MP Black Ethernet Cable, 15 ft. (~4.6 m)
12043-0831-A006	FIII MP Black Ethernet & ISDN Cable, 6 ft. (~2 m)
12043-0831-A015	FIII MP Black Ethernet & ISDN Cable, 15 ft. (~4.6 m)
12043-0832-A010	Standalone Ethernet, ISDN, USB Cable, 10 ft. (~3 m)
12043-0833-A010	Standalone Ethernet Cable, 10 ft. (~3 m)
12043-0833-A015	Standalone Ethernet Cable, 15 ft. (~4.6 m)
12043-0833-A100	Standalone Ethernet Cable, 100 ft. (~30.5 m)
12043-0834-A010	Standalone Ethernet & ISDN Cable, 10 ft. (~3 m)
12043-0834-A015	Standalone Ethernet & ISDN Cable, 15 ft. (~4.6 m)
12043-0835-A010	Standalone ISDN Cable, 10 ft. (~3 m)
12043-0835-A015	Standalone ISDN Cable, 15 ft. (~4.6 m)
12043-0836-A010	Standalone USB & ISDN Cable, 10 ft. (~3 m)
12043-0836-A015	Standalone USB & ISDN Cable, 15 ft. (~4.6 m)
12043-0837-A015	Data Extension Cable, Ethernet & ISDN, 15 ft. (~4.6 m)
12043-0837-A025	Data Extension Cable, Ethernet & ISDN, 25 ft. (~7.6 m)
12043-0837-A050	Data Extension Cable, Ethernet & ISDN, 50 ft. (~15.2 m)
12043-0838-A006	FIII MP Black (J6) to FIII Black (J6)
12043-0839-A010	FIII MP Black Ethernet (J6) to RJ-45 cable

POWER CABLES

Product Number	Product Name
Vehicle - DC Power Generator Cables	
12043-0840-A010	BGAN DC Power to 4 Leads / RF-7800B-VU Remote On/Off Cable, 10 ft (~3 m)
12043-0840-A015	15 ft (~4.6 m)
12043-0841-A006	BGAN DC Power to RF-505X Power Supply Cable, 6 ft (~2 m)
12043-0841-A015	15 ft (~4.6 m)
12043-0842-A006	BGAN DC Power to RF-505X Power Supply/ RF-7800B-VU Remote On/Off Cable, 6 ft (~2 m)
12043-0842-A015	15 ft (~4.6 m)
12043-0843-A015	Automobile 12 VDC Power Cable, 15 ft (~4.6 m)
12043-0846-A010	BGAN DC Power to 2 Leads, 10 ft (~3 m)
12043-0846-A015	BGAN DC Power to 2 Leads, 15 ft (~4.6 m)
Power Grid - AC Power Generator Cables	
12043-0844-A1	AC to DC Power Supply
Power Extension Cables	
12043-0845-A015	Power Extension Cable, 15 ft (~4.6 m)
12043-0845-A025	Power Extension Cable, 25 ft (~7.6 m)
12043-0845-A050	Power Extension Cable, 50 ft (~15 m)
12043-0839-A010	FIII MP Black Ethernet (J6) to RJ-45 cable

AUDIO PRODUCTS

Product Number	Product Name
12091-4140-01	ISDN Handset
12091-47160-01	ISDN to POTS Converter

BATTERIES AND CHARGING UNITS

Product Number	Product Name
BA-5590/U	Non-Rechargeable, Disposable Lithium Battery
BA-5390/U	Non-Rechargeable Lithium Manganese Dioxide Battery
BB-590/U	Rechargeable Nickel-Cadmium Battery
BB-390B/U	Rechargeable Nickel Metal-Hydrate Battery
BB-2590/U	Rechargeable Li Ion Battery
RF-5058-CH002	Two-Bay Charger/Conditioner
RF-5058-CH006	Six-Bay Charger/Conditioner

SOFTWARE

Product Number	Product Name
RF-7800MM-SW001	Communications Planning Application (CPA) Platform for RF-7800M-MP Support Package

MANUALS

Product Number	Product Name
10515-0365-4200	Operation Manual - RF-7800B BGAN Terminals

CO-SITE FILTER

Product Number	Product Name	Qty
12091-4200-01	HF/VHF/UHF Co-Site Low Pass Filter Kit for L-Band	1

VHF LOW-BAND RF ANTENNA CONNECTION
OPTIMAL FOR VHF-LOW FM AND SINGARS



VHF LOW-BAND RF ANTENNA CONNECTION
OPTIMAL FOR VULOS AM/FM, HQ-II, SINGARS AND HPW-LOS



**Low-Band
J5 Antenna Port**



UHF WIDEBAND RF ANTENNA CONNECTION
OPTIMAL FOR ANW2



UHF MANPACK WIDEBAND
225-450 MHZ
RF-3164-AT122

MULTI-WIDEBAND RF ANTENNA CONNECTION
OPTIMAL FOR ANW2



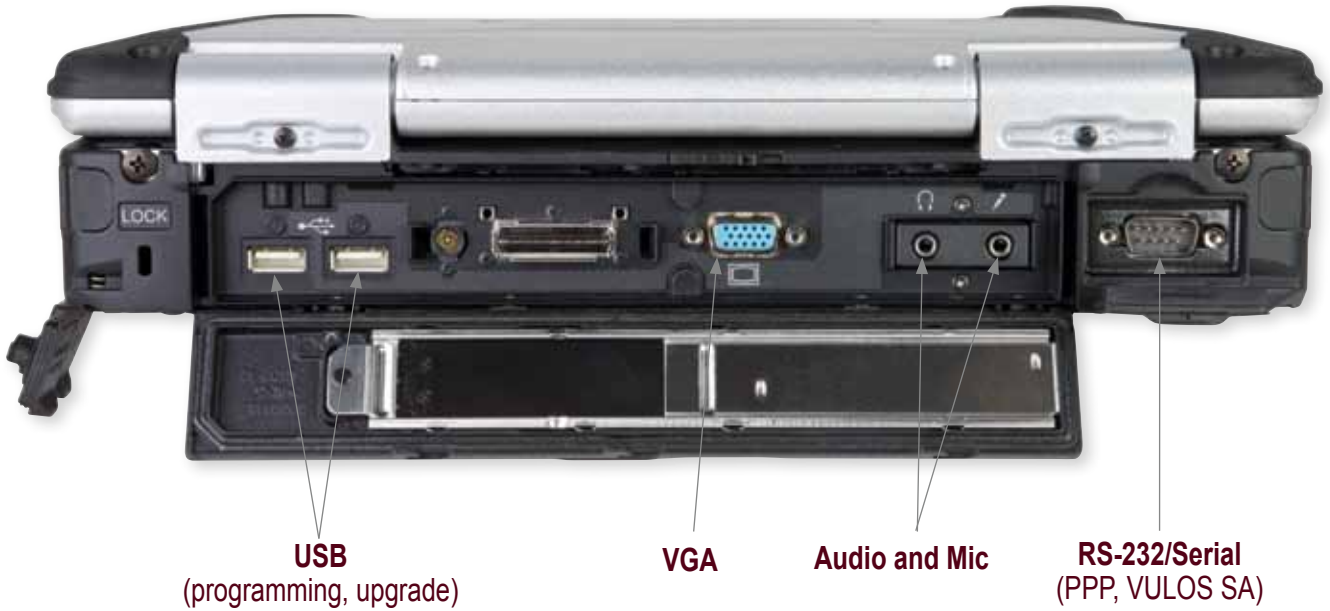
UHF MANPACK WIDEBAND
225-2000 MHZ
RF-3165-AT152

**High-Band
J8 Antenna Port**

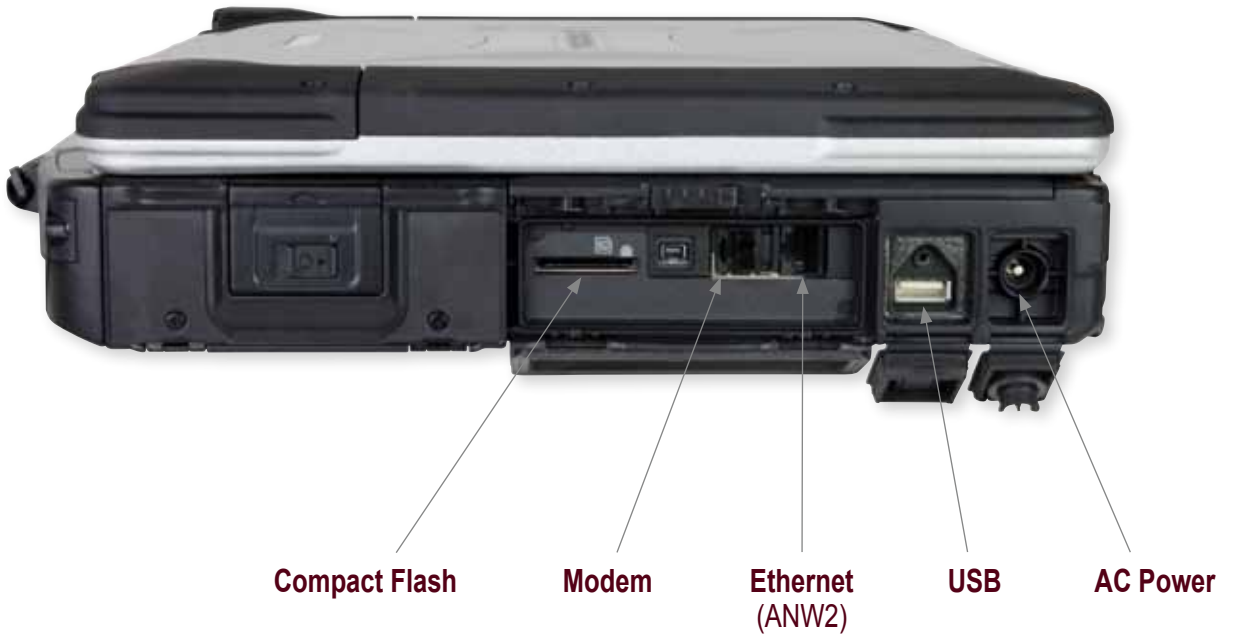


RUGGED LAPTOP COMPUTER PORTS

REAR CONNECTIONS



SIDE CONNECTIONS



INE MODE (INLINE NETWORK ENCRYPTOR) CONFIGURATION

Black Side IP Router
LAN / WAN
AES encrypted IP Data



Red Side IP Router
LAN / ANW2
IP Devices, Laptops, Peripherals

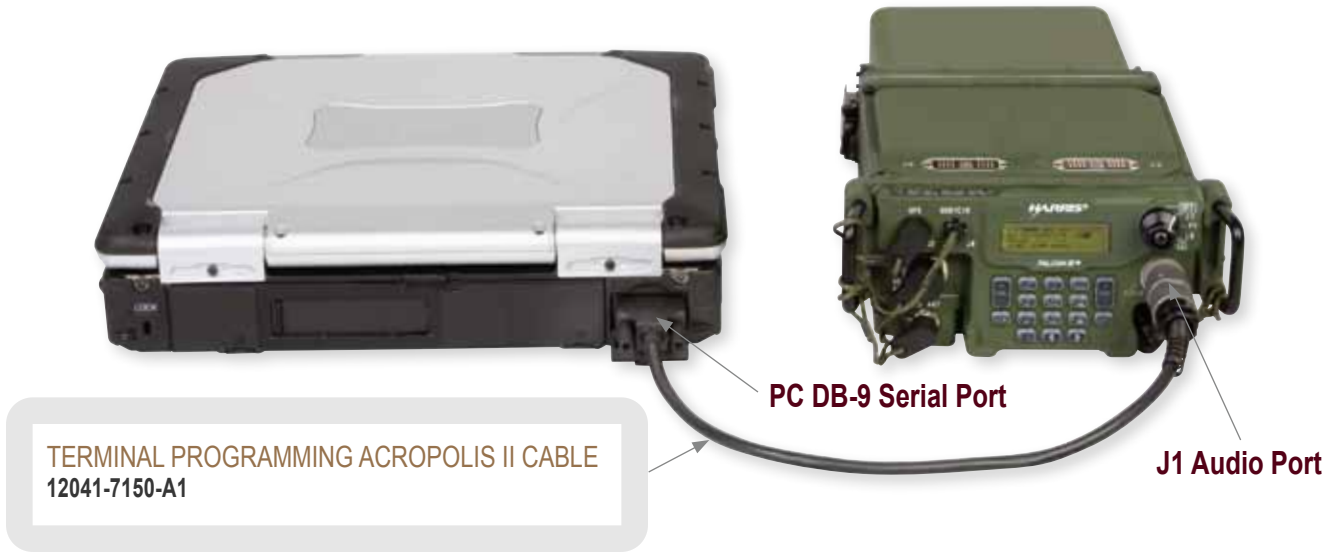


INE BLACK ETHERNET (J6) TO RJ-45 CABLE
12043-0839-A010

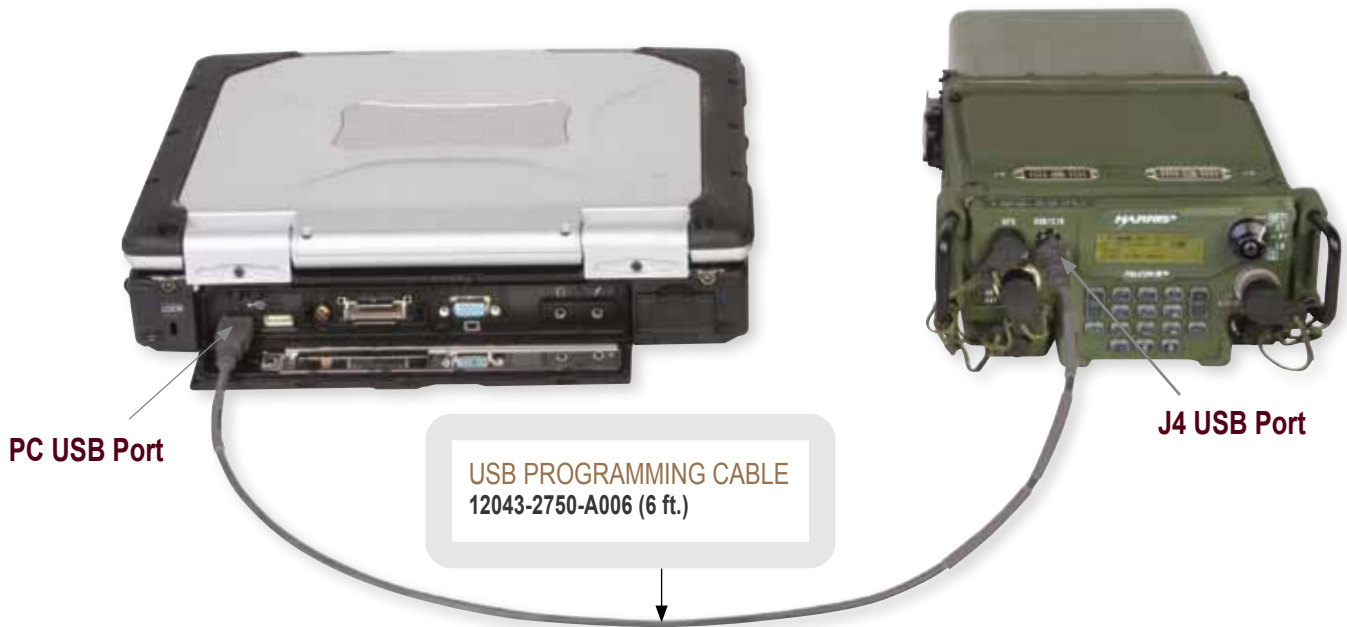
RED SIDE (J3) TO ETHERNET CABLE
12043-2760-A006

**ACROPOLIS II TERMINAL PROGRAMMING
(CRYPTOGRAPHIC UPGRADE TAMPER RECOVERY)**

FOR RUGGED LAPTOP COMPUTER PORT AND CONNECTIONS, PLEASE SEE PAGE 20



USB RADIO PROGRAMMING APPLICATION (CPA AND FIRMWARE UPGRADE)



ETHERNET NETWORKING (ANW2 AND ROVER VIDEO)

FOR RUGGED LAPTOP COMPUTER PORT CONNECTIONS, PLEASE SEE PAGE 20



POINT-TO-POINT (PPP), AND VULOS SA



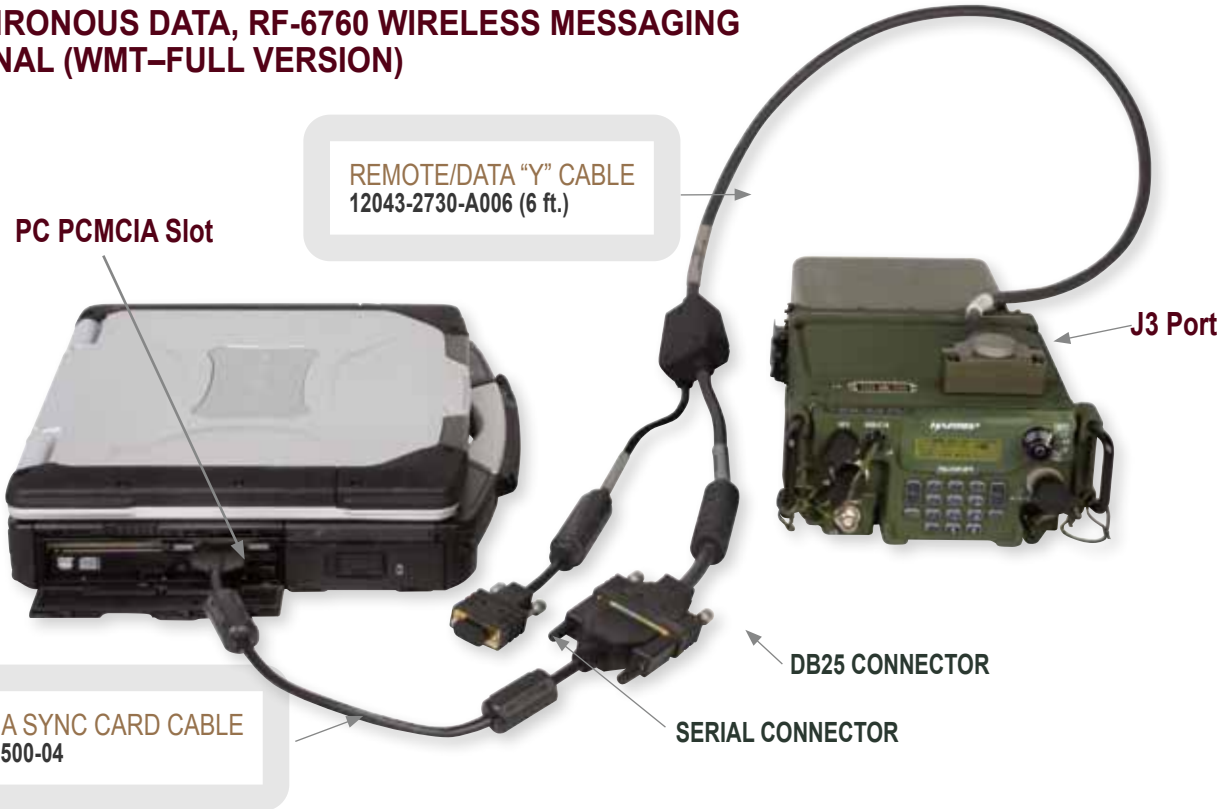
*Additional lengths available.

ASYNCHRONOUS RS-232 DATA (ASCII)

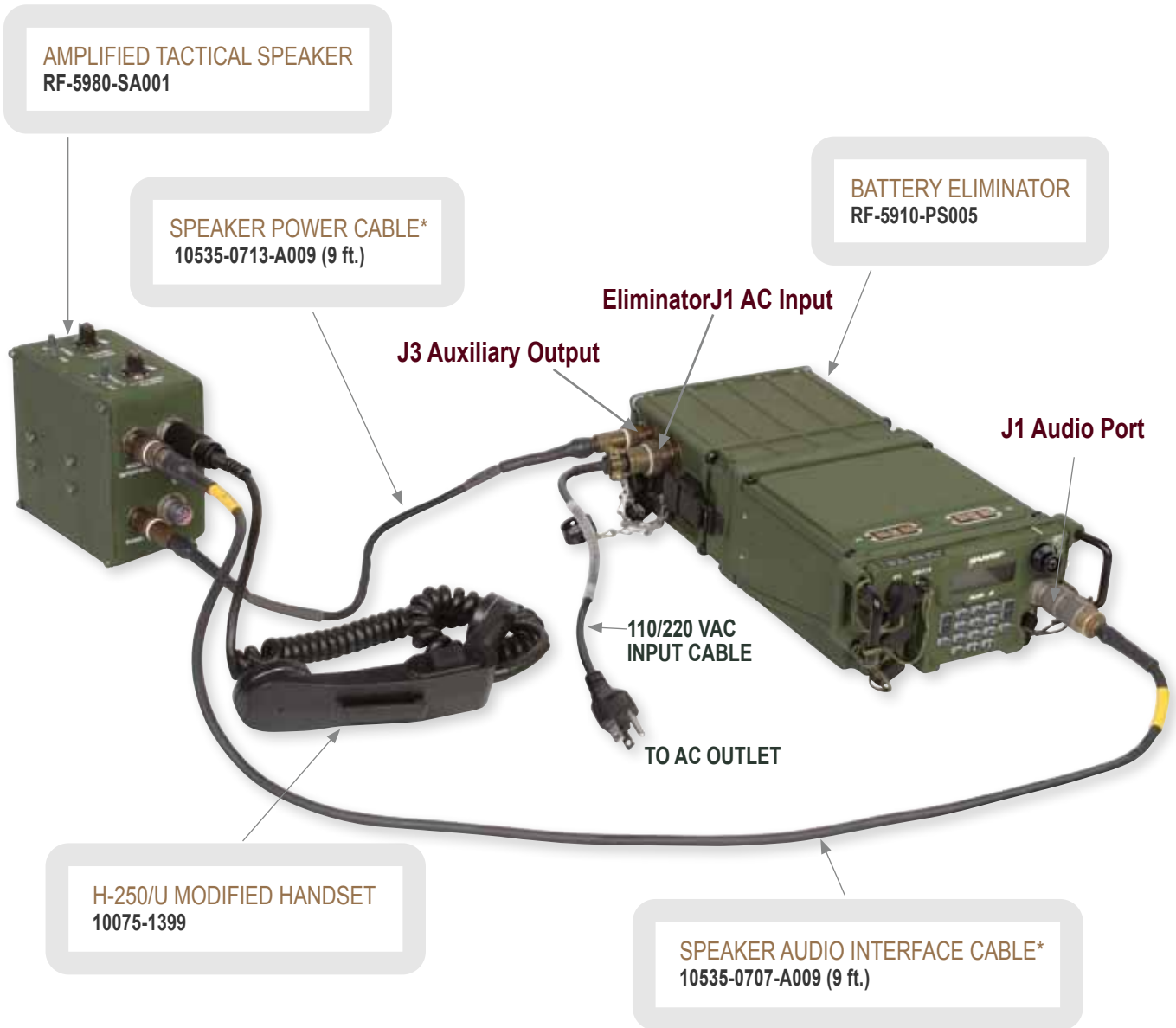
FOR RUGGED LAPTOP COMPUTER PORT CONNECTIONS, PLEASE SEE PAGE 20



**SYNCHRONOUS DATA, RF-6760 WIRELESS MESSAGING
TERMINAL (WMT-FULL VERSION)**



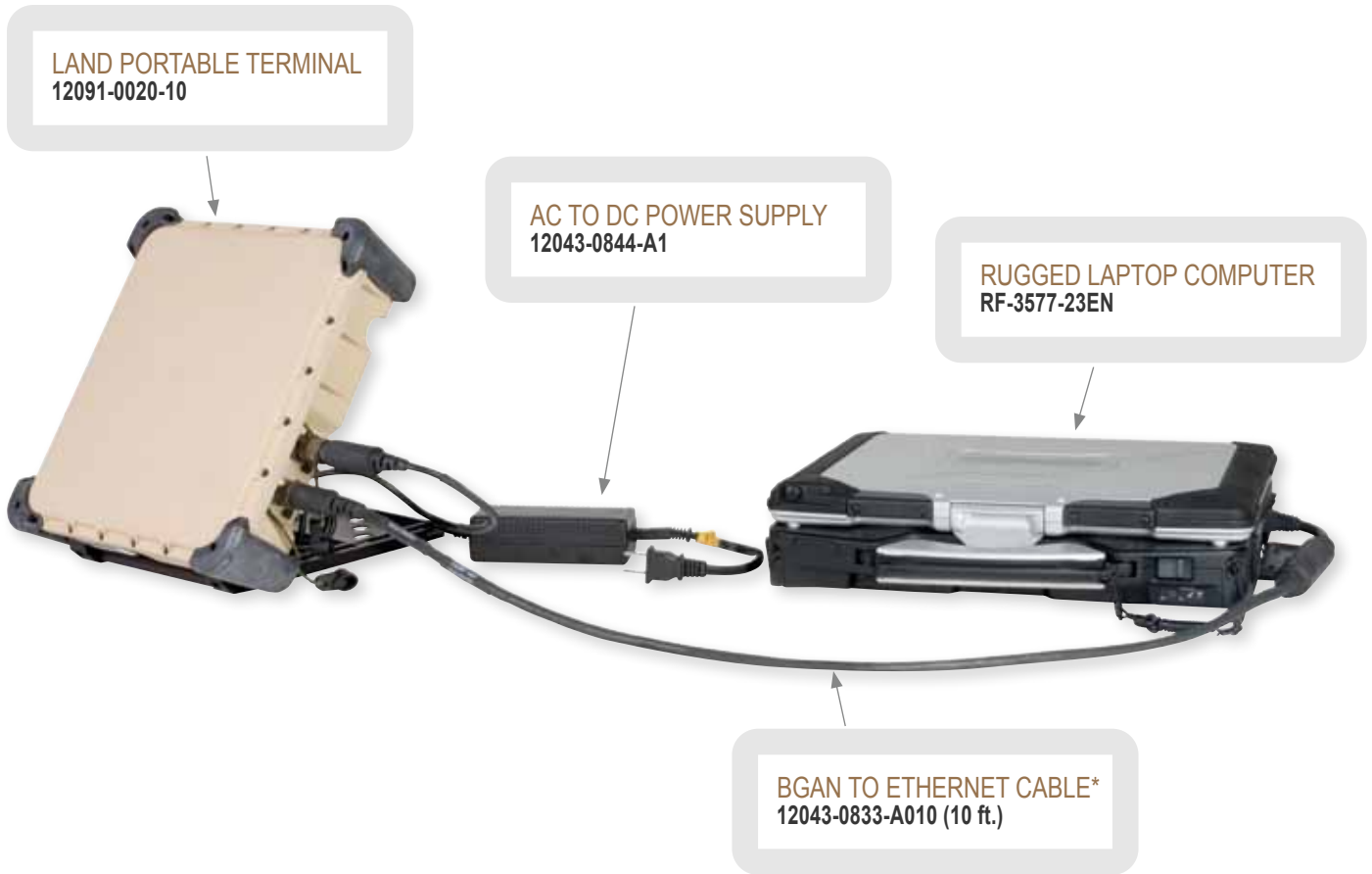
BATTERY ELIMINATOR AC CONNECTION AND TACTICAL SPEAKER



*Additional lengths available.

LAND PORTABLE BGAN STANDALONE CONFIGURATION

FOR RUGGED LAPTOP COMPUTER PORT CONNECTIONS, PLEASE SEE PAGE 20



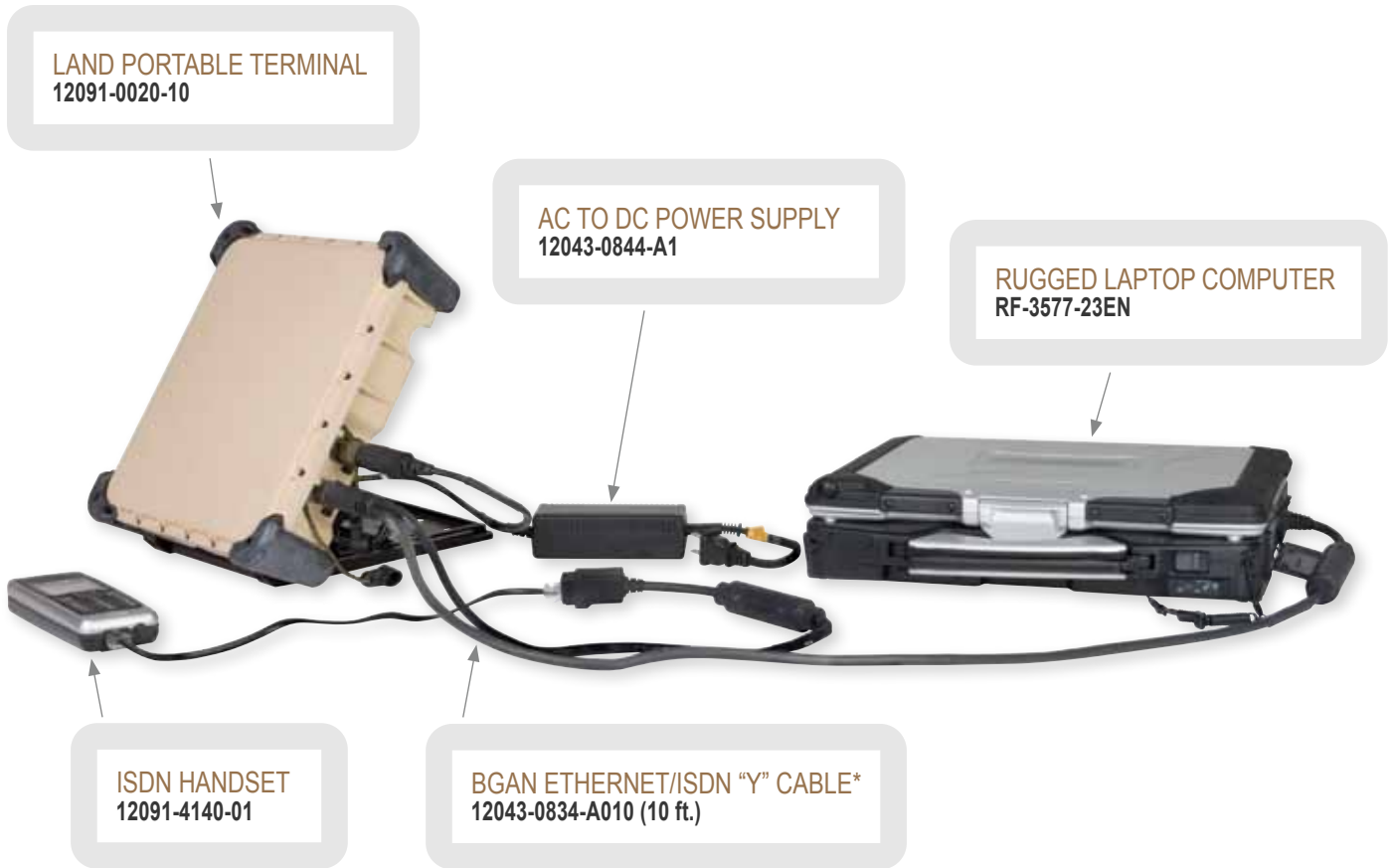
*Additional lengths available.

LAND PORTABLE BGAN INE CONFIGURATION WITH BATTERY BOX KIT

FOR RUGGED LAPTOP COMPUTER PORT CONNECTIONS, PLEASE SEE PAGE 20



LAND PORTABLE BGAN STANDALONE CONFIGURATION WITH ISDN HANDSET
FOR RUGGED LAPTOP COMPUTER PORT CONNECTIONS, PLEASE SEE PAGE 20



*Additional lengths available.

LAND PORTABLE BGAN WITH ETHERNET AND ISDN TO POTS CONVERTER

FOR RUGGED LAPTOP COMPUTER PORT CONNECTIONS, PLEASE SEE PAGE 20



*Additional lengths available.
**Plain Old Telephone System

GLOBAL POSITIONING SYSTEM (GPS)

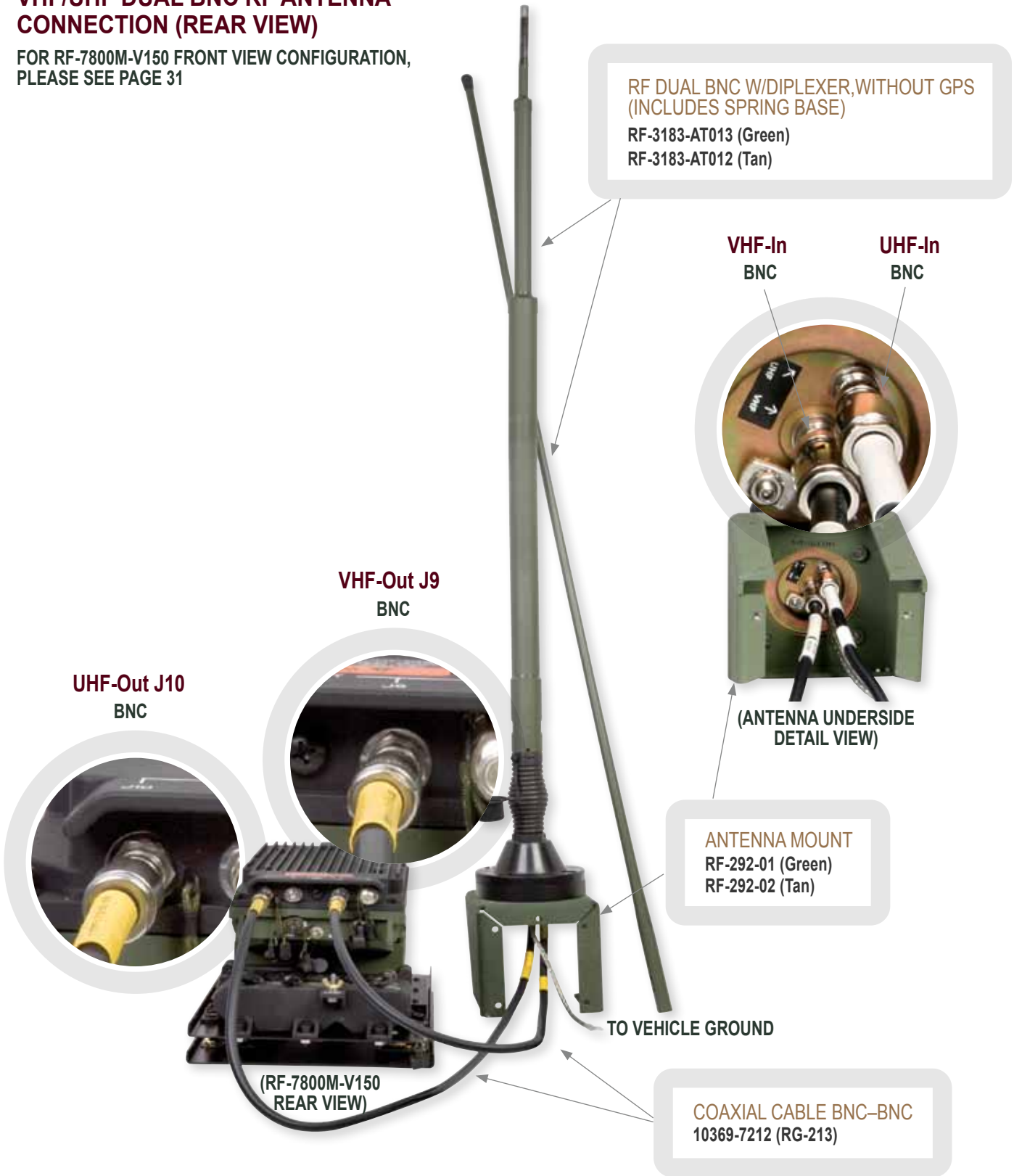


RF-7800M-V150 (FRONT VIEW)



VHF/UHF DUAL BNC RF ANTENNA CONNECTION (REAR VIEW)

FOR RF-7800M-V150 FRONT VIEW CONFIGURATION, PLEASE SEE PAGE 31



WIDEBAND ANW2 RF ANTENNA CONNECTION 225-450 MHZ (REAR VIEW)

FOR RF-7800M-V150 FRONT VIEW CONFIGURATION, PLEASE SEE PAGE 31



WIDEBAND ANW2 RF ANTENNA CONNECTION 500-2000 MHZ (REAR VIEW)

FOR RF-7800M-V150 FRONT VIEW CONFIGURATION, PLEASE SEE PAGE 31



*Additional lengths available.

WIDEBAND RF ANTENNA CONNECTION 30-2000 MHZ (REAR VIEW)

FOR RF-7800M-V150 FRONT VIEW CONFIGURATION, PLEASE SEE PAGE 31



DUAL UHF/L-BAND VEHICULAR DIPOLE ANTENNA
 30-2000 MHZ
 (INCLUDES SPRING BASE)
 RF-3187-AT320 (Green)

UHF J10-Out BNC

VHF J9 Out BNC

High-Band J12-Out TYPE-N

ANTENNA MOUNT
 RF-292-01 (Green)
 RF-292-02 (Tan)

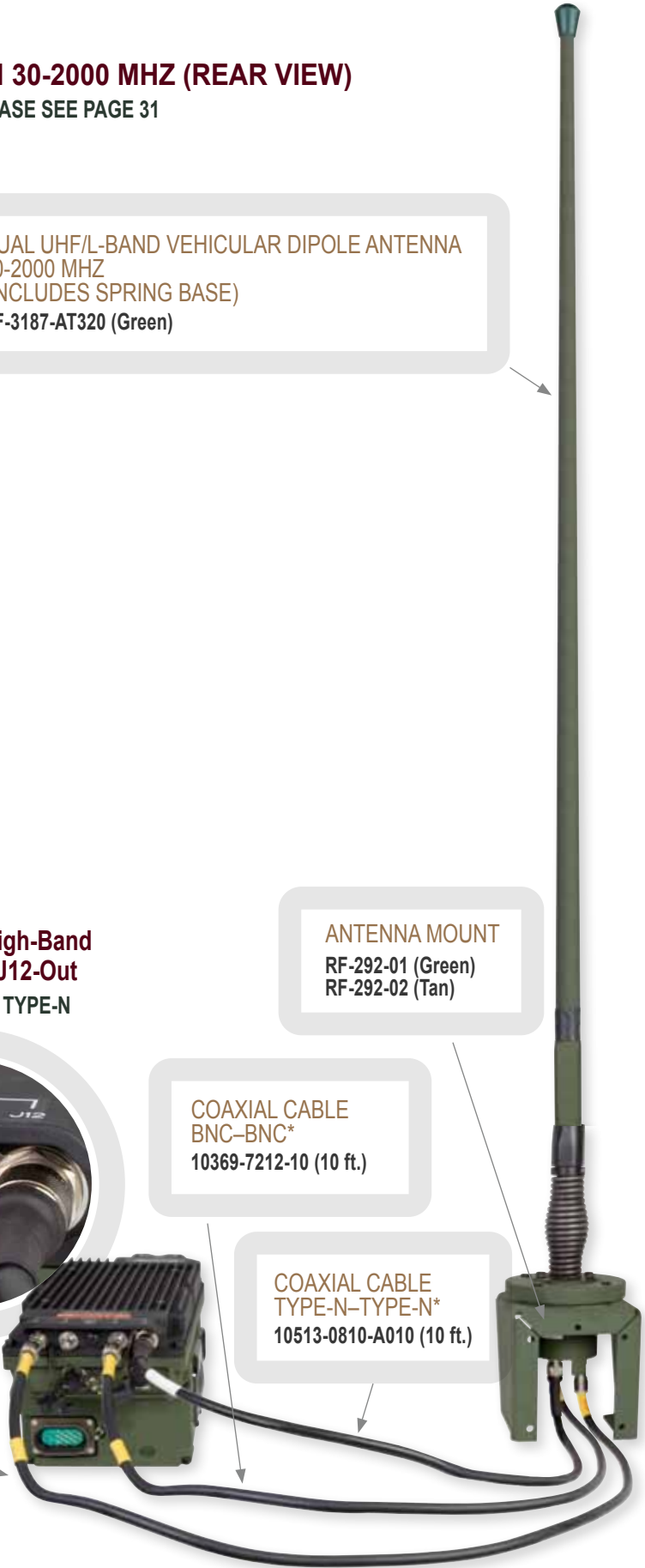
COAXIAL CABLE
 BNC-BNC*
 10369-7212-10 (10 ft.)

COAXIAL CABLE
 TYPE-N-TYPE-N*
 10513-0810-A010 (10 ft.)



COAXIAL CABLE BNC-BNC*
 10369-7212-10 (10 ft.)

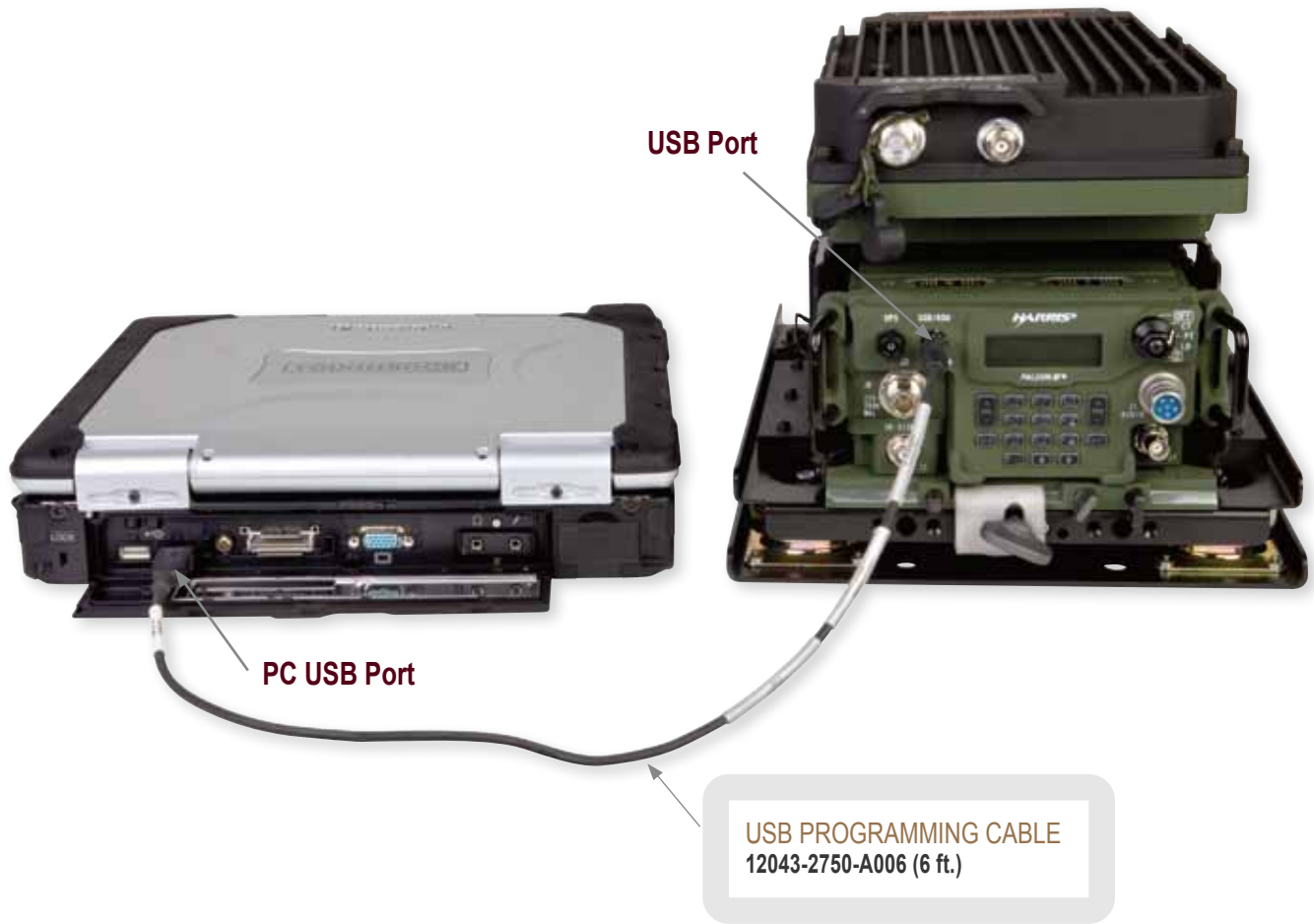
(RF-7800M-V150 REAR VIEW)



*Additional lengths available.

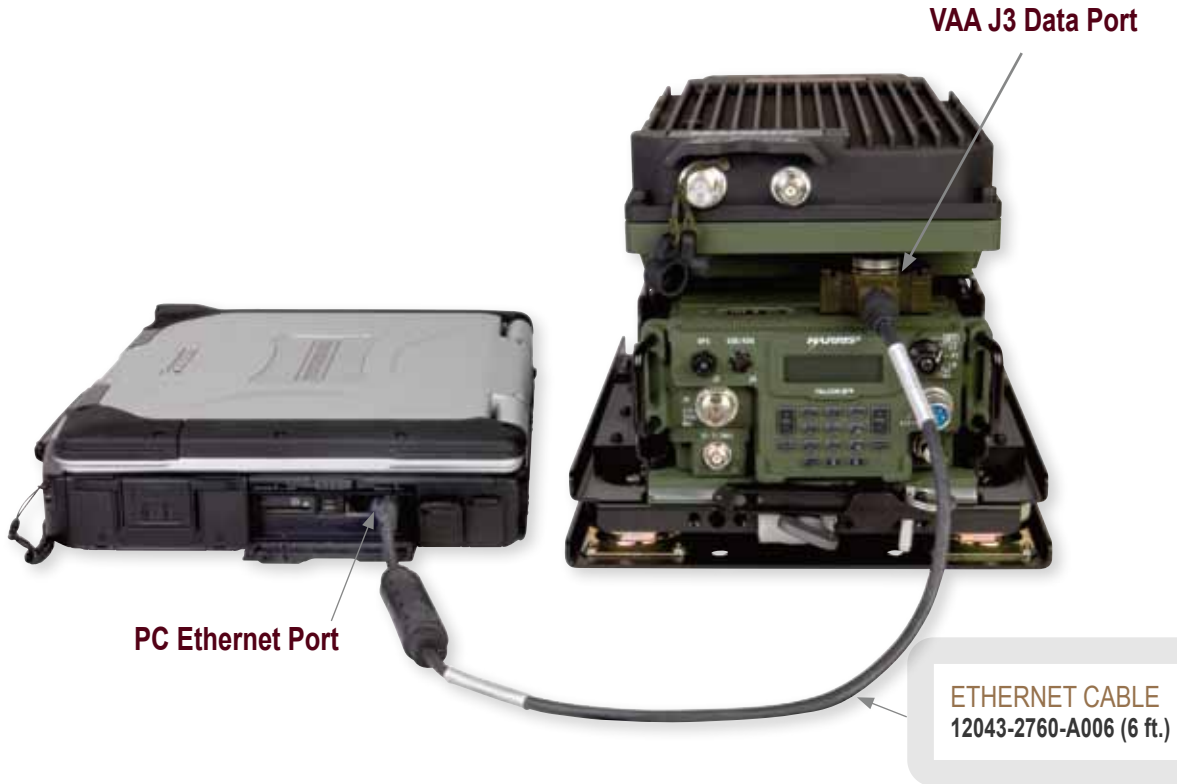
USB RADIO PROGRAMMING APPLICATION (CPA AND FIRMWARE)

FOR RUGGED LAPTOP COMPUTER PORT CONNECTIONS, PLEASE SEE PAGE 20



ETHERNET NETWORKING (ANW2 AND ROVER VIDEO)

FOR RUGGED LAPTOP COMPUTER PORT CONNECTIONS, PLEASE SEE PAGE 20



POINT-TO-POINT (PPP), AND VULOS SA

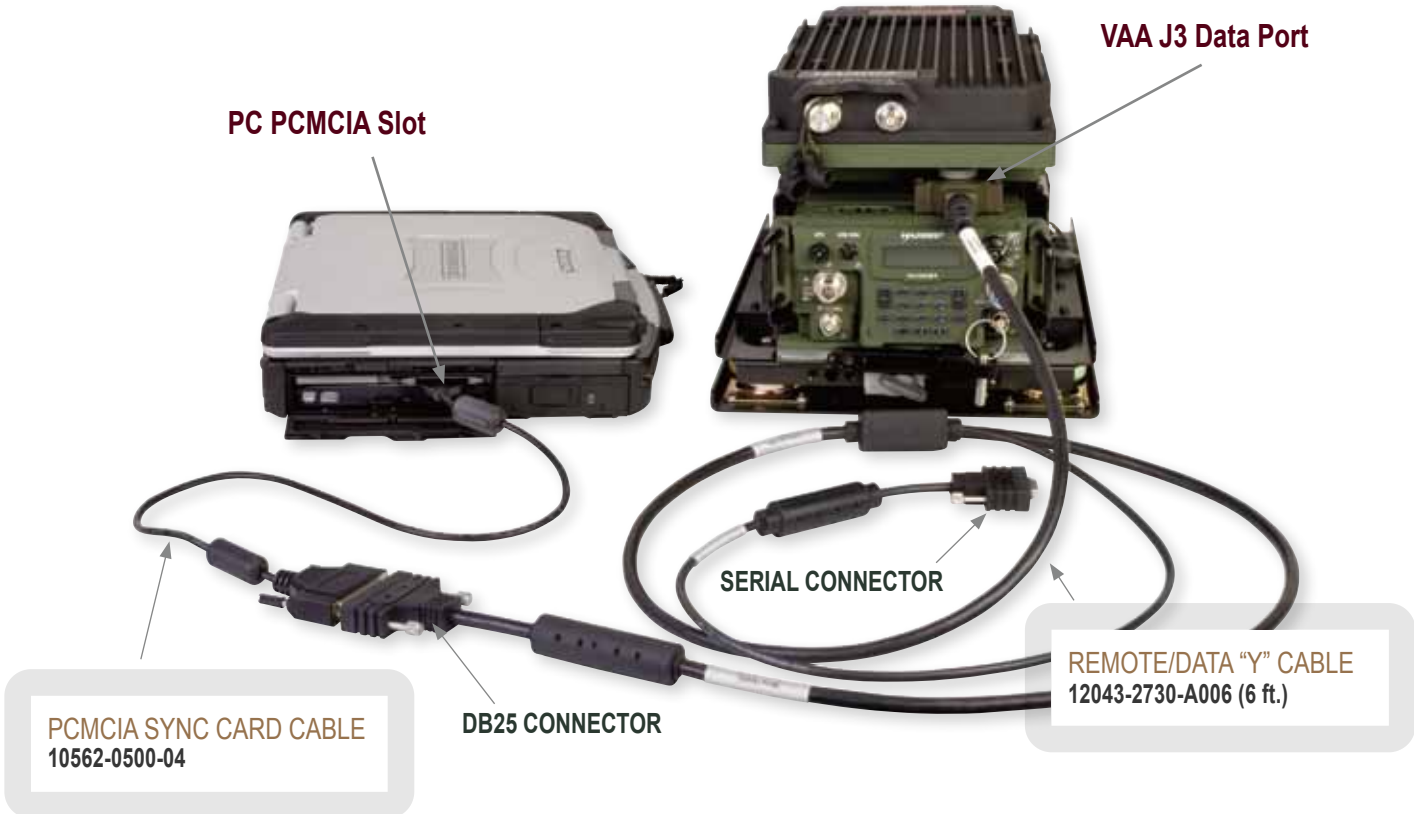


REMOTE/DATA “Y” CABLE, ASCII REMOTE (DB9), SYNC OR ASYNC DATA (DB25)

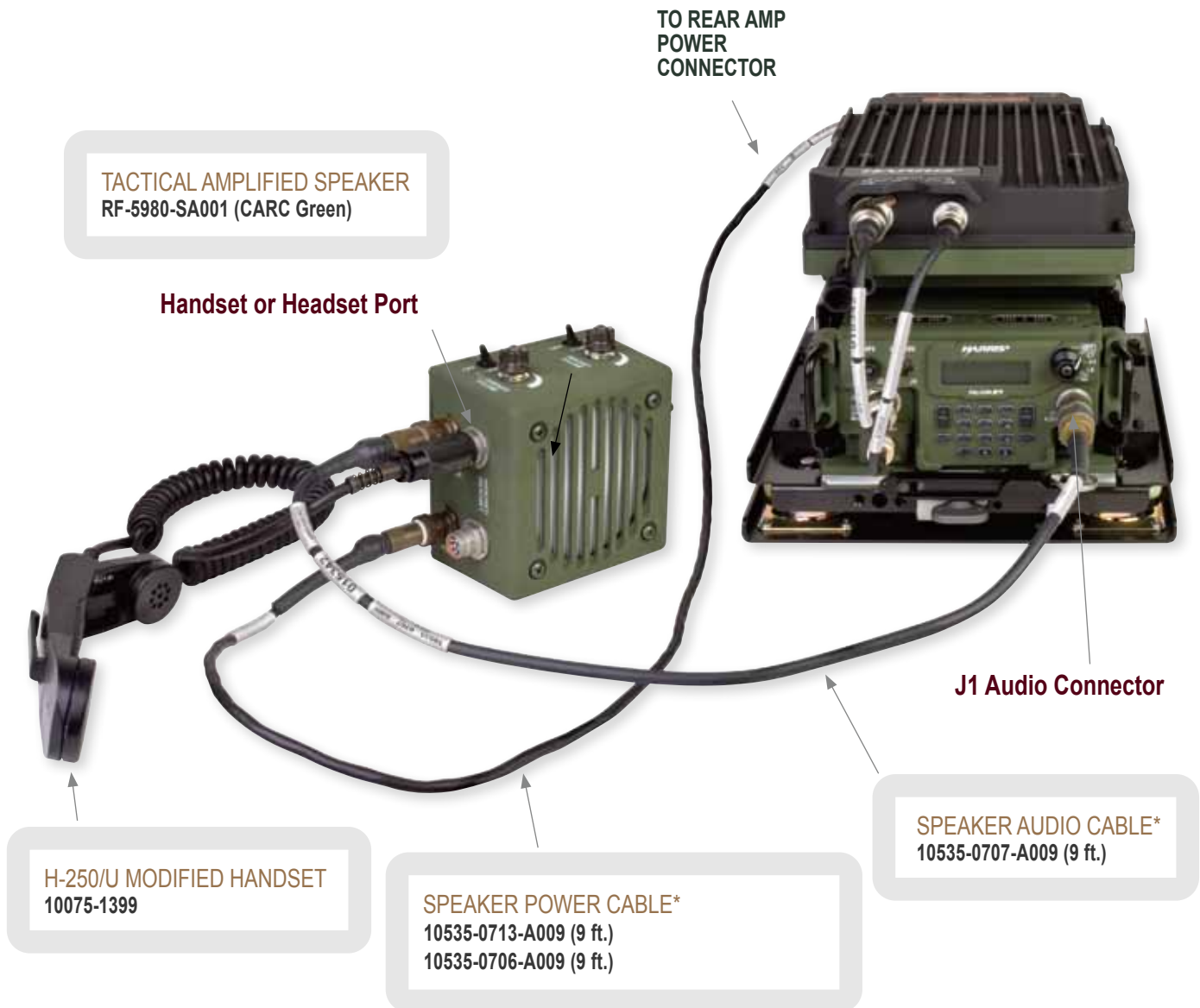
FOR RUGGED LAPTOP COMPUTER PORT CONNECTIONS, PLEASE SEE PAGE 20



SYNCHRONOUS DATA, RF-6760 WIRELESS MESSAGING TERMINAL (WMT)



TACTICAL AMPLIFIER SPEAKER CONNECTION (FRONT VIEW)



*Additional lengths available.

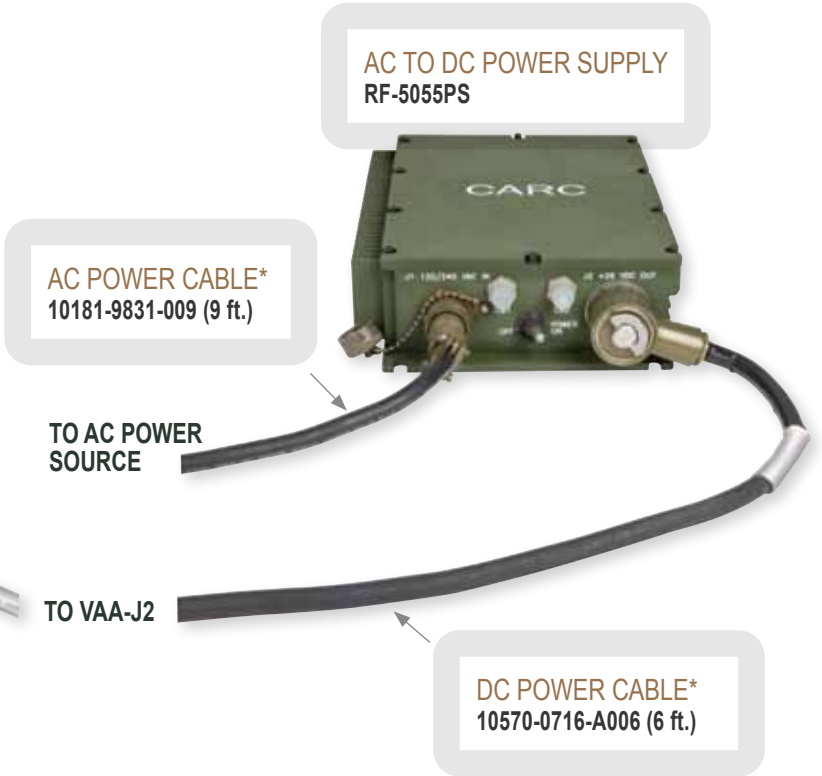
TACTICAL AMPLIFIER SPEAKER CONNECTION (REAR VIEW)



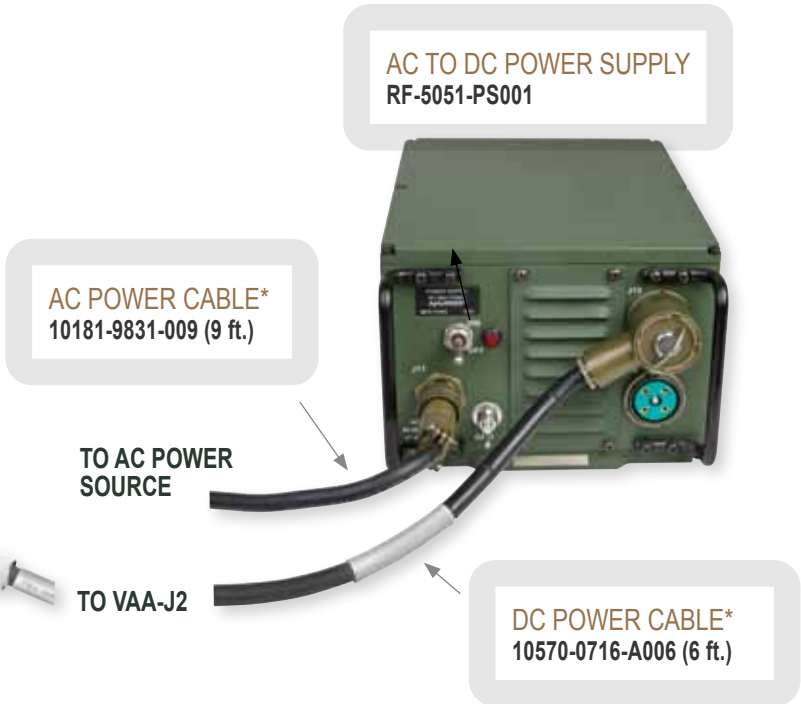
*Additional lengths available.

AC POWER SUPPLY CONNECTION**

VAA DC Power-In J2



VAA DC Power-In J2



*Additional lengths available.

** Please see the Harris RF Communications Worldwide Product Catalog for more detailed information about each power supply.

DC POWER SUPPLY CONNECTION**

VAA DC Power-In J27



(V255 REAR VIEW)

TO VAA- J27

DC TO DC POWER SUPPLY
RF-5056PS

DC POWER CABLE
10373-0030 (15 ft.)

TO DC POWER
SOURCE

DC POWER CABLE*
10570-0716-A006 (6 ft.)



(V250 REAR VIEW)

TO VAA- J27

DC POWER CABLE*
10570-0716-A006 (6 ft.)

DC TO DC POWER SUPPLY
RF-5061-PS001

DC POWER CABLE
10373-0030 (15 ft.)

TO DC POWER
SOURCE

*Additional lengths available.

** Please see the Harris RF Communications Worldwide Product Catalog for more detailed information about each power supply.

LAND MOBILE STANDALONE CONFIGURATION

FOR RUGGED LAPTOP COMPUTER PORT CONNECTIONS, PLEASE SEE PAGE 20



*Additional lengths available.

LAND MOBILE STANDALONE CONFIGURATION WITH ISDN HANDSET

FOR RUGGED LAPTOP COMPUTER PORT CONNECTIONS, PLEASE SEE PAGE 20



LAND MOBILE BGAN CONFIGURATION WITH VEHICULAR IN-LINE NETWORK ENCRYPTOR WITH LAND MOBILE ANCILLARY KIT

FOR RUGGED LAPTOP COMPUTER PORT CONNECTIONS, PLEASE SEE PAGE 20



*Additional lengths available.

DIMENSIONS AND WEIGHT



RF-7800M-MP Manpack	
Dimensions	7.4" W x 3.4" H x 8.8" D
Weight	7.9 lbs. (without battery and battery box)

RF-7800M-V120	
Dimensions	
Vehicular Amplifier Adapter	7.5" W x 6.7" H x 11.9" D
Mount	10.5" W x 4.8" H x 14.3" D
Combined	10.5" W x 8.0" H x 14.5" D
Weight	
Vehicular Amplifier Adapter	8.5 lbs.
Mount	13.7 lbs.
Manpack	7.9 lbs.
Combined total (with radio)	30.2 lbs.



RF-7800M-V250	
Dimensions	
Vehicular Amplifier Adapter	7.50" W x 6.7" H x 11.9" D
Mount	15.9" W x 4.5" H x 14.5" D
Combined	15.9" W x 9.6" H x 14.4" D
Weight	
Vehicular Amplifier Adapter	2 x 17.5 lbs.
SIM	4.2 lbs
Mount	19.6 lbs.
2 Manpacks	15.8 lbs.
Combined total (with radio)	75.2 lbs.



RF-7800M-V150	
Dimensions	
Vehicular Amplifier Adapter	7.50" W x 7.63" H x 13.4" D
Mount	10.5" W x 4.8" H x 14.3" D
Combined	10.5" W x 9.30" H x 14.4" D
Weight	
Vehicular Amplifier Adapter	17.8 lbs.
Mount	13.7 lbs.
Manpack	7.9 lbs.
Combined total (with radio)	39.4 lbs.

VOLTAGE MATRIX

Voltage Input: 18-34 VDC

Current	Mode	Current	Power Out	Voltage In
Max Manpack Inrush		30 A		34 V
Max Manpack Input		2.25 A (Software limiting)		
Max RF-7800M-V120 VAA Inrush		20 A		34 V
Max RF-7800M-V120 Manpack Input		4.25 A		19 V
Max RF-7800M-V150 VAA Inrush		35 A		34 V
Max RF-7800M-V150 VAA Input		16.5 A 3:1 VSWR	50 W	28 V
		19.5 A 3:1 VSWR	50 W	23 V
Manpack Only Input	TX	2.5 A	10 W	28 V
	RX	0.32 A		28 V
RF-7800M-V120 Input	TX	2.40 A	10 W	28 V
	RX	0.40 A		28 V
VAA Input	TX	10.8 A	54 W	28 V
	RX	1.74 A		28 V

SPECIFICATION INFORMATION

RF-7800M-MP		
Frequency Range 30 MHz-2 GHz	Narrowband: VHF low: 30-90 MHz VHF high: 90-225 MHz UHF low: 225-512 MHz	Wideband: UHF 225 MHz-2 GHz
Channel Bandwidth	Narrowband: 5 kHz, 6.25 kHz, 8.33 kHz, 12.5 kHz, 25 kHz and 30 kHz	Wideband: 1.2 MHz, 5 MHz
Remote Control	RS-232 ASCII based	
Data Interfaces	Ethernet, RS-232/RS-422 Synchronous and Asynchronous	
Control Interfaces	Ethernet, RS-232, RS-422, USB	
Software Environment	SCA 2.2	
GPS	Internal	
Frequency Stability	0.5 ppm	
Narrowband Modes		
Narrowband Waveforms	Narrowband AM/FM/ASK/FSK	
Voice and Data Modes	Simplex or Half-duplex MIL-STD-188-113 CVSD STANAG 4591 MELPe (2400 bps) Synchronous data (16 kbps)	
Encryption Modes	AES	

RF-7800M-MP			
Wideband Modes			
Wideband Waveforms	Harris ANW2		
Voice and Data Modes	Voice/Situational Awareness (Cursor on Target and C2PC) /IP data		
Nodes	2, 5, 10 nodes		
Maximum Data Rates	5 Mbps on-air capacity (QAM), 1.6 Mbps throughput in each direction		
Network Formation	Fast formation (<20 sec), and easy (ad-hoc networking)		
Typical Range (20 watts)	Clear line-of-sight (mountain top to mountain top)		
	Dismounted: 10 km		
	Vehicular: 25 km		
	Rural		
	Dismounted: 5 km		
	Vehicular: 7.5 km		
	Urban		
	Dismounted: 2 km		
	Vehicular: 3 km		
Encryption modes	AES, Modified IPSEC		
Security			
Encryption	Acropolis II AES		
Key Storage	180 black keys		
Mission Fill Device Compatibility	Windows-based Radio Programming Application (RPA)		
Physical and Environmental			
Weight	7.8 lbs. without battery and battery box		
	Approx. 10 lbs. with BA-5390 battery and battery box		
Shock/Vibration	MIL-STD-810F for tracked vehicles, wheeled vehicles, shipboard		
EMI/RFI	MIL-STD-461E		
Transmitter			
Power Output	Narrowband:	SATCOM:	Wideband:
	10 watts	20 watts	20 watts peak/ 5 watts average

SPECIFICATION INFORMATION

BGAN	
General	
BGAN Satellite L-Band Frequency Operation	Transmit (Tx): 1626.5 to 1660.5 MHz Receive (Rx): 1525 to 1559 MHz Full-duplex, BLOS operation
Power Specifications RF-7800B-DU024	Power consumption: 10 W (Idle), 30 W (Transmit) 15 dBW (45 dBm) Effective Isotropic Radiated Power (EIRP)
Power Specifications RF-7800B-VU104	Power consumption: 25 W (Idle/Tracking); Maximum: 60 W (Transmit) 18 dBW (48 dBm) EIRP
Power Options (RF-7800B-VU104)	DC voltage input range 10V - 34.3 VDC, Internal MIL-STD-1275 power supply, 120/240 VAC power supply, Standard vehicle DC adapter
Power Options (RF-7800B-DU024)	DC voltage input range 10V - 34.3 VDC, Optional Battery Box (12091-4010) for use with single BA-5590 style battery (nominally 20 hours of continuous operation), 120/240 VAC power supply, Standard vehicle DC adapter
RF-7800B-VU104 Continuous tracking	360° continuous field of view in azimuth 5° to >110° continuous field of view in elevation Travel speeds up to 70 mph (112 km/h) 100°/second (azimuth and elevation); 100°/second ² (azimuth and elevation)
Data Interface	Ethernet, ISDN, USB (simultaneous use of all interfaces)
Circuit Switched Services	Telephony Voice: 4 kbps ISDN data/voice: 64 kbps, for 3.1 kHz toll quality audio (above 15 degree look angle to the satellite)
IP Networking (Packet Switched)	Supports IPv4, IP Security (IPSEC) encrypted packets, and IP bridging over Ethernet interface, or USB. Choice of Background or Streaming.
DHCP Server	Supports Dynamic Host Configuration Protocol (DHCP) Server capability
Circuit Switching Interfaces	Type 1 Secure Terminal Equipment, Plain Old Telephone System (POTS) Foreign Exchange Subscriber (FXS), and ISDN (using 12091-4160-01 ISDN to POTS Converter)
Remote control	Allows remote control commands over Ethernet
Web interface - using Internet Explorer for example	Full web interface via HyperText Transfer Protocol (HTTP) for configuration, operation, and status of the BGAN terminal
Environmental	
Ruggedized Testing	MIL-STD-810F
EMI	MIL-STD-461E
Immersion	1 meter
Wind, Vehicle Motion (RF-7800B-VU104)	Standard Mount: 125 mph (200 km/h); Magnetic Mount: 100 mph (160 km/h) Vehicle Speed: 70 miles per hour (112 km/h)
Mechanical (RF-7800B-VU104)	
Dimensions	8 height x 20 depth - inches (20 x 51 cm)
Weight	28 lbs (12.6 kg)
Mechanical (RF-7800B-DU024)	
Dimensions	9.5 height x 9.5 width x 2.5 depth - inches (24 x 24 x 6.5 cm)
Weight	6.5 lbs (3 kg)



RF COMMUNICATIONS

GOVERNMENT COMMUNICATION SYSTEMS

BROADCAST COMMUNICATIONS



COMMUNICATIONS SOLUTIONS FOR TODAY AND BEYOND.

Harris is an international communications and information technology company serving government and commercial markets worldwide. Headquartered in Melbourne, Florida, the company has approximately \$5 billion of annual revenue and more than 15,000 employees — including nearly 7,000 engineers and scientists. Harris is dedicated to developing best-in-class *assured communications*® products, systems, and services. Additional information about Harris Corporation is available at www.harris.com.