RF-7800H HF Wideband Manpack

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THIS INFORMATION WAS APPROVED FOR PUBLISHING PER THE ITAR AS "BASIC MARKETING INFORMATION OF DEFENSE ARTICLES" OR PER THE EAR AS "ADVERTISING PRINTED MATTER".

Agenda

- Harris Introduction

- Product Benefits/Description

- Wideband Data

Harris HF Leadership

- Harris is the worldwide market and technical leader in HF communications
- More than 100,000 Falcon II HF radios fielded worldwide
- Most of NATO nations fielded Falcon II HF radios
- US & UK Forces have standardized on Harris HF
- Harris HF provide Coalition Partners secure interoperability with US Forces

- Harris active participation in MIL-STD & STANAG definition
- Contributions to technical committees, and organizations:
  - NATO AHWG
  - HF Industry Association
  - Nordic HF
  - MILCOM

Photo courtesy of the USEC

TRANSFORMING HF COMMUNICATIONS FOR TODAY'S DEMANDING DIGITAL BATTLEFIELD

SMALLER
FASTER
LIGHTER

Falcon III RF-7800H-MP Wideband HF/VHF Radio System

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RF-7800H-MP Capabilities

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**Wideband Data
Smaller, Faster, Lighter**

- New Wideband 120Kbps Data

- New Small Single Battery Form Factor

- 1.5 MHz – 60 MHz HF/VHF

- 20W HF, 10W VHF

- Secured with Citadel and AES

- Built in GPS Receiver
  - SA/Position Reporting

- USB & Ethernet Cable Interfaces

- Rugged, Tested to MIL-STD-810G

- Interoperable with Falcon II HF Radios & Accessories

Product Comparison

Features	RF-7800H	RF-5800H
Frequency Range	1.5-60 MHz	1.6-60 MHz
Wideband HF	Yes	No
USB Port	Yes	No
Enhanced Antenna coupler	Yes	No
Enhanced GPS	Yes	No
Size - without batteries	20W x 8.3H x 23.4D cm	26.7W x 8.1H x 21.3D cm
Digital Voice - MELP	600/1200/2400	600/2400
Weight - without batteries	3.9 Kg	4.7 Kg
SDR Platform	Yes	Yes
HF Power Out	20 Watts	20 Watts
VHF Power Out	10 watts	10 watts
Embedded GPS	Yes	Yes
Built in SA	Yes	Yes
Encryption	Citadel /AES	Citadel /AES
S 4538 (3G)	Yes	Yes
HF ECCM	Yes	Yes
IP Data	Yes	Yes
Remote KDU	Yes	Yes
WBFSK – VHF	16kbps	16kbps
MIL-STD-810G	Yes	Yes

Engineered by the HF market leader with more than 50 years of proven reliability

data subject to change

Falcon II to Falcon III Adapters

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Falcon III RF-7800H Interoperable with Falcon II:

✓Vehicular, Base Station, and Transit Case Systems
✓20W, 150W, and 400W PAs
✓Falcon II couplers interoperable with RF-7800H Wideband
✓Communications Planning Applications (CPA) for RF-7800H-MP and Falcon II radios

Falcon III Adapter Kits:

✓ RF-7800H-AD020 – convert   20W Falcon 2 system
✓ RF-7800H-AD125 – convert 125W Falcon 2 system
✓ RF-7800H-AD150 – convert 150W Falcon 2 system
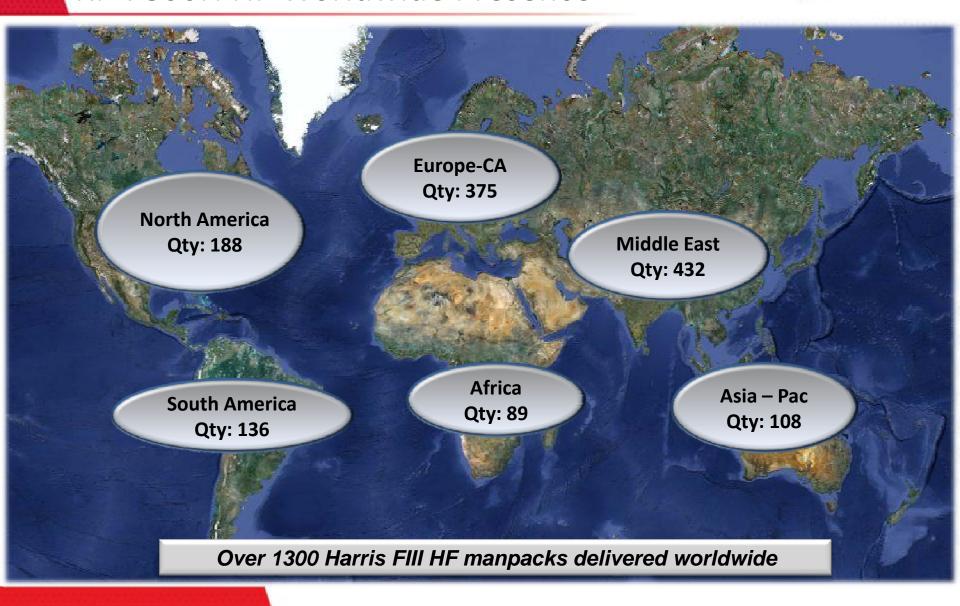✓ RF-7800H-AD400 – convert 400W Falcon 2 system

RF-7800H HF Worldwide Presence

Europe-CA
Qty: 375

North America
Qty: 188

Middle East
Qty: 432

South America
Qty: 136

Africa
Qty: 89

Asia – Pac
Qty: 108

Over 1300 Harris FIII HF manpacks delivered worldwide

Wideband OTA Demonstrated Data Rates

- ROC, NY <-> Central Florida (1,700 km)
  - Average 76.8 kbps (max 96, 120 kbps)
  - 400W PAs
- Canada <-> ROC, NY (150 km)
  - 76.8 kbps with 150W
- 20W Manpack: up to 38.4 kbps
- OTA maximum data rates will always depend on the current channel conditions.

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Harris Adaptive Wideband ALE

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- Bandwidth, modulation, bit rate options
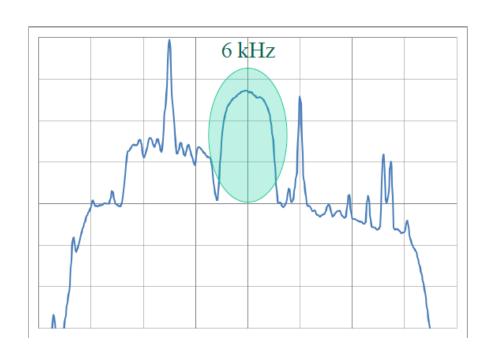
Legacy Radio capability: Narrow Band only

WB allows for faster data rates but also better performance in poor channels by increasing BW to utilize a more robust modulation

Waveform Number	Modulation	Data Rate				
		3 kHz	6 kHz	12 kHz	18 kHz	24 kHz
0	Walsh	75	150	300	600	600
1	BPSK	150	300	600	1,200	1,200
2	BPSK	300	600	1,200	2,400	2,400
3	BPSK	600	1,200	2,400	4,800	4,800
4	BPSK	1,200	2,400	4,800	-	9,600
5	BPSK	1,600	3,200	6,400	9,600	12,800
6	QPSK	3,200	6,400	12,800	19,200	25,600
7	8PSK	4,800	9,600	19,200	28,800	38,400
8	16QAM	6,400	12,800	25,600	38,400	51,200
9	32QAM	8,000	16,000	32,000	48,000	64,000
10	64QAM	9,600	19,200	38,400	57,600	76,800
11	64QAM	12,000	24,000	48,000	72,000	96,000
12	256QAM	16,000	32,000	64,000	90,000	120,000
13	QPSK	2,400				

Adaptive WB (Spectrum Sensing)

- Dynamically avoids interference

- Adaptively selects BW, frequency offset, and data rate based on observed channel conditions

- Data rate automatically adapts during link due to changing channel conditions

Spectrum Sensing is important for Wideband HF Adaptive Systems

RF-7800H-MP Ancillaries

- Operators Manual
- Operator's Card
- Field Reference Guide
- Handset modified H-250
- HF CPA
- Tactical Chat

- OE505-Whip antenna Kit
- NVIS Antenna Adapter
- GPS antenna Kit
- Ground Stake Kit
- Battery Box
- Cable Strain Relief
- Cable Asynchronous Data
- USB Programming Cable
- Standard 1 year warranty

The solution: HF OE-505 NVIS Antenna Adapter

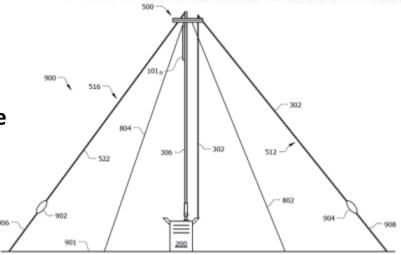**Converts the OE-505 to various wire antenna types including:**

- **Dipole**
- **Inverted Vee**
- **Sloping Vee**
- **Inverted L**
- **Tee Top**

Adapter Part Number: 10372-1270-01
Patent Pending

Benefits:

- **Quick and simple deployment**
- **Most configurations require no other support**
- **Impressive gain over dipole on ground**
- **Reduces RADHAZ and shock**
- **Can be used with available wire, e.g.: Field Wire**

Facilitates dismounted NVIS Operation

24/7 Support!

- http://premier.harris.com/rfcomm/
- Contact Customer Service
- Download
  - Firmware
  - Software
  - Online Training
  - Product Notices
  - Newsletters

RF-7800H-MP Wideband HF

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- Smaller
- Lighter
- Faster
- Adaptive WB ALE
- Force Multiplier

Engineered by the HF market leader with more than 50 years of proven reliability

The Falcon III RF-7800H tactical radio will transform the battlefield

RF-7800H Wideband HF/VHF Manpack

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AVAILABLE TODAY!

- Smallest, lightest and fastest wideband HF manpack radio

- Fully interoperable with Falcon II® HF radios and accessories

- Secure, reliable communications over the most challenging channel conditions

- Leveraging a half-century of market-leading innovation in HF tactical communications

Transforming HF Communications for Today's Demanding Digital Battlefield