



BARRETT

Military Communications



PRC-2090 Tactical HF radio system



- Advanced frequency hopping
- ALE to MIL-STD 188-141B (FED STD 1045)
- Display removable for wearing on webbing
- Rugged custom handset with full keypad
- 5.2 kg with 10 Ah battery
- Vehicle docking station with full 100 W RF power output
- Fully immersible

The PRC-2090 is a rugged and exceptionally specified tactical manpack with all the features available from the traditional tactical manpack suppliers at a more realistic price.

The PRC-2090 manpack is equipped with a fully automatic antenna tuner allowing the deployment of a full range of tactical and static antennas. All connections to the IP67 rated manpack are made using MIL-STD connectors. Configuring the PRC-2090 is simple using an intuitive Windows based programming system through the auxiliary socket.

The PRC-2090 tactical radio system comprises the PRC-2090 manpack transceiver and a vehicle docking station. When in a vehicle the PRC-2090 will operate with a Barrett 910 or 2019 automatic tuning mobile antenna and at a full 100 W PEP RF power output in voice mode.



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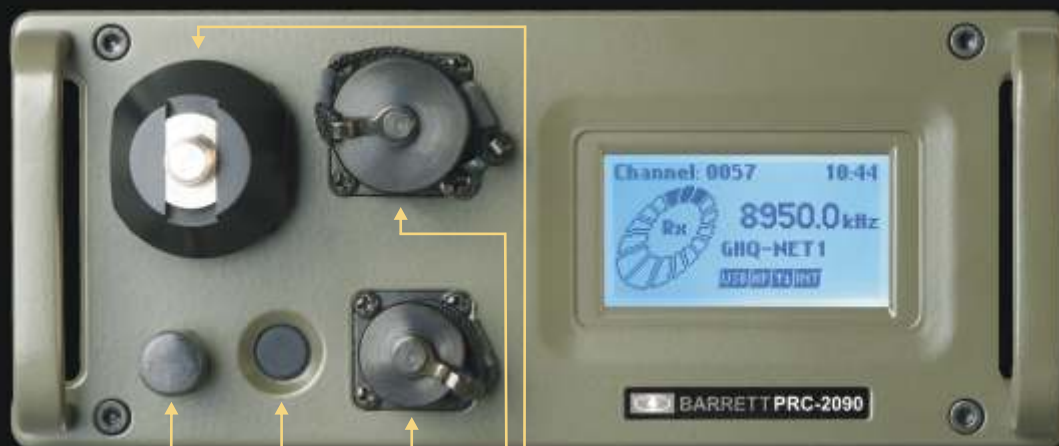
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Earth terminal

On/Off switch

ESU (for frequency hopping)
CW Key

Bayonet whip adaptor,
BNC connector
underneath for 50
ohm antennas

General I/O port
for external modems,
encrypted handset
etc



Detachable display



Features

- Full HF coverage 1.6 to 30 MHz
- All modes J3E (USB, LSB), H3E (AM) J2A (CW) J2B (AFSK)
- Automatic Link Establishment (ALE) 2G MIL-STD 188-141B (FED STD 1045)
- Fully immersible to 1 metre

Advanced frequency hopping

The unique, easy to use frequency hopping system requires no central synchronisation station, has no entry or late entry time and requires no handshaking. Hopping at 5 or 25 hops per second, using a 10 digit hopping encryption key, and with a user selectable hopping bandwidth to suit the antenna type in use, the system provides excellent protection against EW attacks.

Internal data modems – STANAG 5066 stack, Clover 2000 and PACTOR III

Internal modem PCB's available supporting Clover 2000 or STANAG 5066 or PACTOR III.

Secure Call

Secure Call is an innovative, narrow band voice encrypter that is very simple to use, has no handshaking or sync delays, and provides operators secure point to point, or point to multipoint communications.

Lightweight

Using the latest lightweight alloys the PRC-2090 weighs 5.2 kg including its 10 Ah, quick change, Lithium Ion battery cartridge. The PRC-2090's small physical size makes it comfortable to operate and wear when deployed in either of its backpack options.

Outstanding voice quality

The standard DSP noise reduction system reduces external channel noise, the effects of interference and enhances audio signals to provide easier listening. The level of noise reduction can be easily selected to suit prevailing conditions.

Extended operation time

The very low current consumption of the PRC-2090 manpack enables it to operate for over 20 hours on one battery cartridge. Spare quick change battery cartridges are small, lightweight and easily fit in the carry system side pockets. The battery cartridges contain the charge management system and can be charged when connected to the transceiver or separately with any available source, including solar, hand crank or wind generator. Dry cell emergency packs are available (on special order) to extend mission time, negating the need to carry charging equipment.

Detachable display - fully featured handset

The display, complete with the handset, detaches from the transceiver unit. This enables the operator to wear the display unit on his front webbing and have full operational access to the manpack without removing the manpack. For temporary command posts an optional 15 metre interface cable allows the transceiver unit to be located at a convenient position away from the operator.



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PRC-2090 Tactical HF radio system

GPS tracking, command and control

Fitted with the optional GPS module, the PRC-2090 tactical manpack is able to be automatically tracked with the Barrett 977 base tracking system. Individual operators can be located, maintained within certain areas or corridors, be alerted if straying into no-go areas and have facilities to alarm controllers if they are in danger. Tracking signals are digital and encrypted for security.

Selective calling systems

The PRC-2090 tactical manpack provides international standard 4 and 6 digit Selective Call facilities that include Telcall, SMS, GPS position and remote transceiver operational status monitoring, point to point Secure Call and remote transceiver disable capabilities.

SMS messaging system

64 character SMS messages, encrypted for security, are directly entered via the PRC-2090 tactical handset keys and can be sent to individual or multiple stations.

Data capability FDT's

Using the PRC-2090's flexible auxiliary connector and internal PCB modems, Barrett 2020 email and data systems and many OEM FDT's (Field Data Terminals) are supported.

Digital crypto handsets

The PRC-2090's audio connectors provide interfaces for various external OEM voice crypto devices. Barrett recommends the Telsy TCH01C HC250U crypto handset for 256 bit high level encryption and ease of use. In addition to the standard options available in the PRC-2090 tactical manpack many other forms of internal analogue and digital encryption systems are available to suit user requirements.

Automatic antenna tuner

Whips and untuned wire antennas are simply deployed using the inbuilt, fully automatic antenna tuner. For overnight or temporary fixed operations various lightweight broadband and tunable tactical antennas are available.

User friendly operation

Barrett's well known intuitive operator interface ensures that using the PRC-2090 tactical manpack is very simple. Principal key functions are performed using a large six key cluster mounted on the custom tactical handset. The operator is guided by a large 128 x 64 LCD graphics display that is removable from the main unit to wear on webbing in front of the operator. The tactical handset plugs into the remote display. The display has adjustable backlighting, allowing maintenance of night vision or high levels of luminescence in poor visibility. Network station addresses and telephone numbers are stored in easily accessible address and phone books and as little as two key strokes will initiate a call.

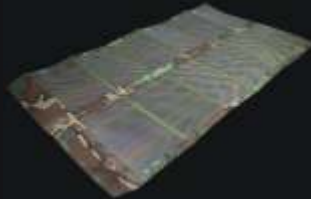


Accessories

Framed backpack for manpack

The full pack provides for the PRC-2090 and various accessories including wire antennas, and spare battery packs.

Part Number: 2090-01-15/16



Tactical solar panel

Solar power supply pack - for charging and operating the PRC-2090 manpack.

Part Number: 2090-03-02/03

Tactical broadband dipole

Rapid deployment broadband dipole operates from 2 to 30 MHz without adjustment - 40 W PEP max. Can be deployed as full length broadband dipole or in compact form.

Part Number: 2090-02-02/03



Antenna elevation kit

Portable elevation kit for tactical broadband and dipoles - rapid deployment.

Part Number: 2090-02-04

Collapsible whip 3 metres

Includes gooseneck for manpack transceiver - colour black.

Part Number: 2090-02-07



GPS receiver / antenna module

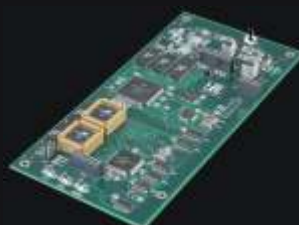
12 channel GPS receiver connects to PRC-2090 GPS connector to provide global position for tracking applications.

Part Number: 2090-01-05

Headphones - lightweight tactical

Folding headphones with MIL STD connector to suit PRC-2090.

Part Number: 2090-01-08



MIL-STD internal modem

5066 stack, multiple MIL-STD waveforms

Part Number: 2090-04-01



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Specifications

Frequency range	1.6 MHz to 30 MHz Tx, 500 kHz to 30 Mhz Rx
Channel capacity	Up to 500 programmable channels (simplex or semi-duplex)
Operating modes	J3E (USB, LSB) - H3E (AM) - J2A (CW) - J2B (AFSK)
Frequency stability	±10 Hz or better than 0.3 ppm over temperature range -30°C to +70°C
Sensitivity	-120 dBm (0.224 µV) for 10 dB SINAD - J3E Mode pre-amp on -115 dBm (0.398 µV) for 10 dB SINAD - J3E Mode pre-amp off
Blocking	-20 kHz and +20 kHz better than 71 dB (max. usable sens.)
Frequency hopping	25 or 5 hops per second with external synchronisation unit (ESU) supplied when the option is fitted. The Barrett frequency hopping system requires no master station, all stations are synchronised and ready to communicate on switch-on. Synchronisation is not affected by propagation or local interference and there is no late entry synchronisation delay.
Rx intermodulation	Better than 89 dBµV
RF connections	Whip or long wire using internal automatic antenna tuner or 50 ohms
RF output power	30 W PEP ± 1.5 dB, 10 W PEP ± 1.5 dB (100 W PEP ± 1.5 dB when in vehicle docking station (voice duty cycle only)
Supply voltage	22 to 24 VDC from external supply
Average battery life	20 hrs based on a 10% voice duty cycle cycle
Environmental	-30°C to +60°C, IP68
Programming	RS-232
Weight	PRC-2090 tactical manpack 3.9 kg 10 Ah Lithium Ion battery cartridge 1.3 kg
Standards	Meets AS/NZS4770:2000, CE, MIL-STD 188-141B MIL-STD 810F immersion, shock, vibration, dust and spray

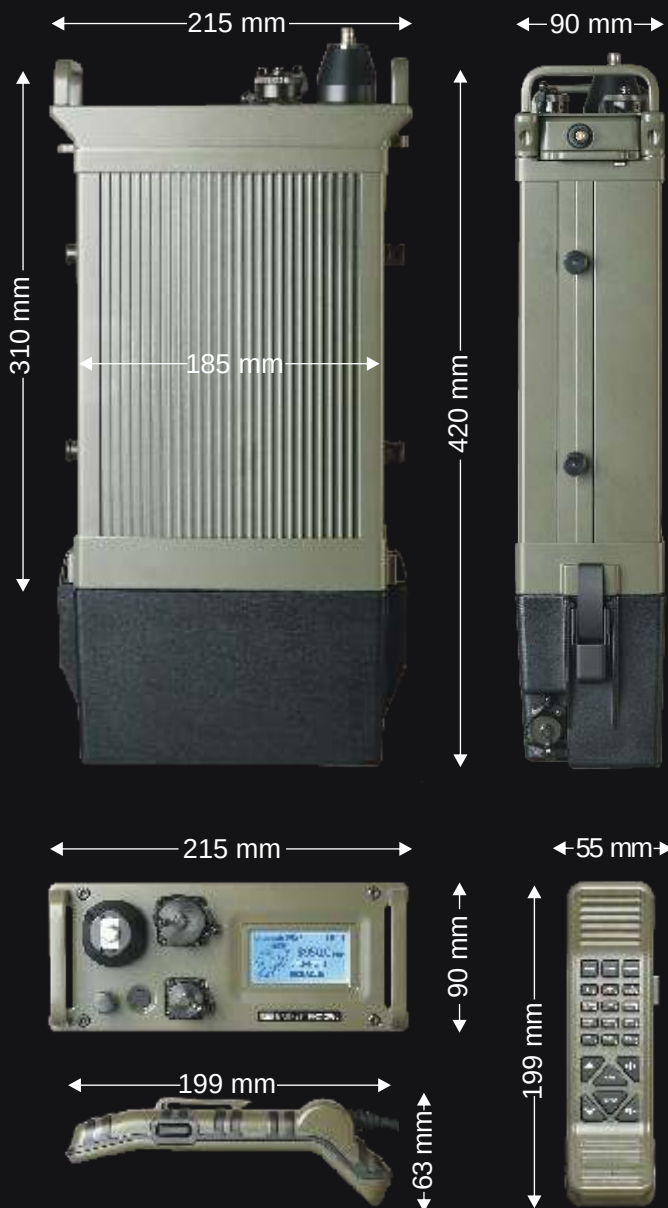
2090 Tactical manpack includes:

2090-01-06	MIL handset - lightweight tactical
2090-03-05	Battery pack 10 Ah
2090-02-07	Collapsible whip 3 metres
2090-02-08	Counterpoise earth kit - singlewire
2090-02-06	Long wire throw out antenna
2090-01-11	Standard display / handset extender interface
2090-01-12	Standard display / handset extender cable 1 metre
2090-10-01	Barrett PRC-2090 operation and installation manual

Options examples:

2090-01-01	Frequency Hopping (requires export licence)
2090-01-02	Secure Call
2090-01-03	ALE MIL-STD 188-141B
2090-01-04	4 and six digit Selective Call and Telcall
2090-03-01	AC/DC power adaptor 11 to 18 VDC/100 to 254 VAC input
2090-03-02/03	Tactical solar power supply
2090-03-04	Hand crank generator
2090-01-08	Tactical headphones
2090-01-07	Tactical CW key
2090-02-03	Tactical broadband dipole
2090-02-01	Tactical wire dipole antenna
2090-01-05	GPS receiver
2090-00-01	PC programming kit

Dimensions



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Certification

No 149438



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