



# BARRETT

## TACTICAL COMMUNICATIONS

# PRC-2090 Tactical HF radio system



### Features include

- **Software Defined Transceiver Core**
- **Advanced Digital Signal Processing (DSP)**
- **Lightweight and compact design**
- **Detachable display for remote extended control operation**
- **Secure Digital Voice options**
- **Fully immersible to 1m**
- **Rapid Docking System (RDS) for vehicle and base configuration (125 Watt)**

The PRC-2090 is a rugged fully featured tactical HF transceiver solution delivering proven field deployable secure communications with un-paralleled reliability.

Designed for operation in the toughest of environments, the PRC-2090 complies with MIL-STD 810G for shock and vibration, is immersible to a depth of 1 m and can be operated in extremes of temperature from  $-40^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$ .

### New Software Defined Core

The new software defined core provides a much improved memory capacity and extends the life cycle and upgradability of the PRC-2090. The software based architecture enables the user to maintain their radio transceiver equipment with the latest transceiver software releases taking advantage of the latest product enhancements and features as they become available.





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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
- Display, complete with the handset, detaches from the transceiver unit. This enables the operator to wear the display unit on front webbing while wearing the patrol pack, with full control.



### Lightweight and Compact Design

Using the latest lightweight alloys the PRC-2090 weighs 3.9 kg (5.2 kg with 10 Ah, quick change, Lithium Ion battery cartridge). Its small physical size, one of the smallest on the market makes it comfortable to wear and operate when deployed as a tactical manpack.

### Advanced calling features

The PRC-2090 transceiver is fully interoperable with a number of advanced digital selective calling systems commonly used by many peacekeeping, non-government and tactical organisations. The PRC-2090 tactical transceiver provides for multi-standard four and six digit Selective Call features including, telephone interconnect, SMS text, GPS tracking, status calling, point to point and/or multipoint Secure Call and remote transceiver disable capabilities.

### Automatic Link Establishment (ALE) (optional)

The PRC-2090 is available with full MIL-STD-188-141B 2G ALE (JITC certified) and FED-STD 1045 ALE. When selected, the Barrett PRC-2090 offers full interoperability with all other military and commercial equipment complying with this standard plus enhanced telephone interconnectivity.

Tactical Field Data Terminal (FDT) option provides the PRC-2090 with the very latest 3G ALE STANAG 4538 with advanced capabilities for voice, messaging, GPS tracking and radio status for simple and reliable communication.

### Detachable display

The display, complete with a fully featured advanced tactical handset remotes from the transceiver unit. This enables the operator to wear the display unit on their front webbing and have full operational access to the manpack without dismounting the manpack transceiver unit itself.

For tactical base and mobile applications, the optional extended control interface allows the transceiver unit to be located at a convenient position away from the operator. This is ideal for command post operations or vehicle mounting where space is limited.

### Enhanced DSP noise reduction

The new Digital Signal Processor (DSP) provides clear intelligible voice communications on analogue circuits through the digital removal of background noise and interference.

The standard DSP noise reduction system provides outstanding voice quality by reducing radio frequency interference (RFI), and the effects of electrical interference by enhancing audio signals to provide easier listening.

### Digital Voice

Barrett digital voice options provide the highest level of digital quality clear speech between similarly equipped transceiver equipment regardless of the prevailing HF conditions.

### Secure Communications (option)

The PRC-2090 can be fitted with a variety of scrambling and digital encryption options for voice and data security.

Options include Barrett's unique Secure Call feature, an innovative narrow band voice scrambler providing secure Selcall initiated point to point or point to multipoint communications on both open or pre-encrypted voice channels, regardless of the base level network encryption employed enabling secure point to point or multipoint communication within a secure network.

Secure voice and data operation is further assured with a variety of internal and external encryption options for both voice and data communications, from 128 bit keyed FTT voice scramblers to DES 56 and export controlled AES 256 digital encryption standards, all interoperable with Barrett's patented frequency hopping providing instant access with no late entry synchronisation delay.

Additionally, the PRC-2090's front panel connectors provide an interface for external OEM voice crypto devices enabling operators to maintain interoperability between multi-vendor sourced security solutions.

### Advanced frequency hopping (option)

The unique, easy to use frequency hopping option (subject to export controls) requires no central synchronisation station, has no entry or late entry time delay and requires no handshaking. Hopping rates of 5 or 25 hops per second, using a 10 digit hopping encryption key, and with a user selectable hopping bandwidth to suit a variety of antenna types. The system provides excellent protection against electronic warfare (EW) attacks and can be operated for extended periods in theatre without synchronisation.

### Integrated GPS interface

Barrett's GPS interface supports connection into any NMEA0183 external GPS receiver antenna for tracking applications. This interface provides emergency call features and position information on all deployed equivalently equipped HF assets.

## Internal data modems - Clover 2500 or STANAG 5066 stack (optional)

The PRC-2090 can be fitted with either the field proven Clover 2500 or STANAG 5066 internal data modems supporting high speed secure data and email transmission, with effective data rates in excess of 14,400 bps.

Clover data modems are supplied with our advanced email and file transfer solution, which has been designed for HF operation. With full ALE control, voice call and typed text GUI proving short text messaging functions and on air live chat. Military standard data modem solutions are provided with Barrett's RC50 STANAG 5066 based communications suite providing for full ALE based automatic secure mail delivery. All data modems are available as internal or external fit according to deployment requirements.

## Intuitive operation

Barrett's well known intuitive operator interface ensures the PRC-2090 is very simple to operate. Principal key functions are performed using a large six key cluster on the advanced tactical handset. The operator is guided by a large 128 x 64 LCD graphics display with adjustable backlighting ensuring the 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.

## Automatic antenna tuner

Whips and un-tuned wire antennas are simply deployed using the inbuilt, fully automatic antenna tuner. For temporary fixed station operations various lightweight broadband and tunable tactical antennas are available.

## Extended operation time

The low current consumption of the PRC-2090 transceiver enables it to operate in excess of 20 hours on one battery cartridge (assumes 90/10 RX/TX duty cycle). Spare quick change battery cartridges are small and lightweight and include an inbuilt charge management circuit allowing the cartridges to be charged whilst fitted and in operation or separately from any available DC source, including solar, hand crank or wind generator.

## Rapid Docking System (RDS) vehicle and base docking solution - 125 WPEP

The Barrett PRC-2090 RDS's unique design enables the PRC-2090 transceiver to be cassette loaded into the docking station for convenient base and mobile operation. Preconfigured to accept a wide range of AC and DC voltages, antenna systems and ancillary equipment, the transceiver automatically increases transmitter power to 125 WPEP and makes the appropriate base or mobile antenna selection automatically.

## PRC-2090 HF Tactical Manpack Package

P/N 2090-01-10

The Barrett PRC-2090 HF Tactical Manpack Package is ideal for extended portable field operations providing the tactical user with effective, secure and comprehensive communications with remote sited command locations. The HF Tactical Manpack Package includes all necessary antennas, smart battery and backpack carrying system.

### The standard package comprises:-

- PRC-2090 HF Tactical transceiver
- Counterpoise earth kit - single wire
- Advanced tactical handset
- Long wire throw out antenna
- Battery pack – 16.8 V 10 Ah Lithium Ion
- AC/DC charger
- Collapsible whip 3 metres with gooseneck
- Framed backpack for manpack



## PRC-2091 HF Tactical Mobile Package

P/N 2091-00-10

The Barrett PRC-2091 HF Tactical Mobile Package upgrades the PRC-2090 by providing a convenient rapid docking system and transmitter power amplification to 125 W PEP. With options for either 12 VDC or 24 VDC power supply and the flexibility of dismantled use of the PRC-2090 transceiver when not in the vehicle (additional accessories may be required), the PRC-2091 HF Tactical Mobile Package can be installed in a wide range of vehicle types with antenna options to suit.

### The standard package comprises:-

- PRC-2090 HF Tactical transceiver
- Rugged external mount speaker
- Advanced tactical handset
- Mass matched vibration mounting platform
- Vehicle docking station
- Tactical Installation Kit



## PRC-2092 HF Tactical Base Package

P/N 2092-00-10

The Barrett PRC-2092 HF Tactical Base Package, like the PRC-2091 mobile package includes the rapid docking system and power amplification to 125 W PEP as well as the flexibility of dismantled communications when the PRC-2090 is removed from the docking station (additional accessories may be required). The HF tactical base package can be installed in a number of temporary base and fixed command configurations powered by a variety of AC and DC power sources. A range of antenna options are available to suit different installation configurations.

### The standard package comprises:-

- PRC-2090 HF Tactical transceiver
- AC Power supply
- Advanced tactical handset
- Rugged external mount speaker
- Vehicle docking station
- Tactical Installation Kit



## General specifications

<b>Frequency range</b>	1.6 MHz to 30 MHz Tx, 250 kHz to 30 MHz Rx*
<b>Channel capacity</b>	Up to 500 programmable channels
<b>Operating modes</b>	J3E (USB, LSB) - H3E (AM) - J2A (CW) - J2B (AFSK)
<b>Frequency stability</b>	±0.5 ppm (±0.3 ppm optional)
<b>Sensitivity</b>	-120 dBm (0.224 µV) for 10 dB SINAD - J3E Mode pre-amp on
<b>Frequency hopping</b>	5 or 25 hops per second
<b>RF connections</b>	Whip or long wire using internal automatic antenna tuner or 50 ohms connector
<b>RF output power</b>	30 W PEP, 10 W PEP (125 W PEP) when in vehicle or base docking station (voice duty cycle only)
<b>Operating temperature</b>	-30°C to +70°C humidity 95% relative, non condensing
<b>Programming</b>	RS-232
<b>Weight</b>	2090 transceiver with 10 Ah Lithium Ion battery cartridge 5.22 kg
<b>Standards</b>	Meets AS/NZS4770:2000, CE, MIL-STD 810G Immersion, shock, vibration, dust and spray

*\*(reduced sensitivity 250 kHz to 500 kHz)*

## Summary of features

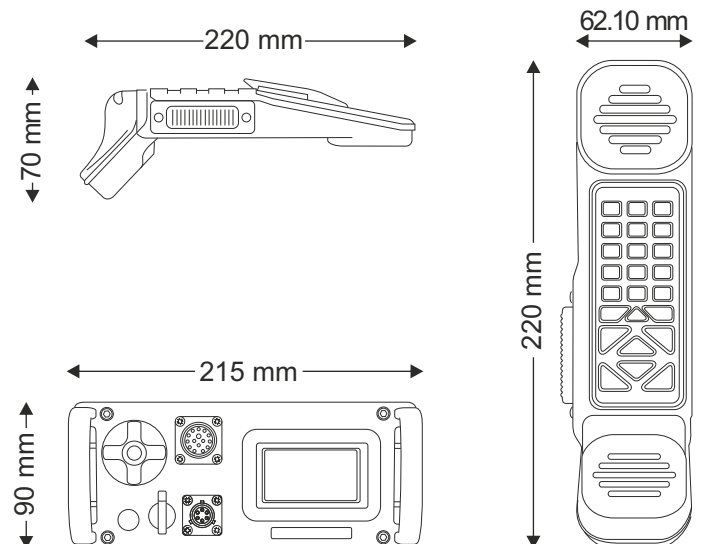
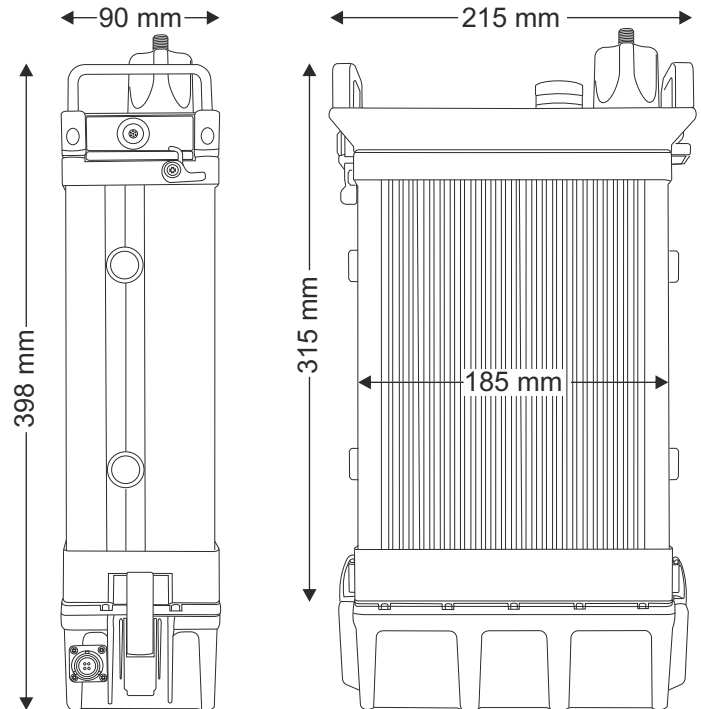
- Software Defined Core
- Lightweight and Compact Design
- Advanced calling features
- Detachable display
- Enhanced DSP noise reduction
- Automatic Link Establishment (ALE) MIL STD 188-141B
- Internal High Speed Data modems options
- Lightweight (5.2 kg with 10AH battery)
- MIL-STD-for shock, vibration and immersion
- Internal fully automatic antenna tuner
- Intuitive and user-friendly interface
- Fully immersible to 1m
- 3 year warranty (Standard)

## PRC-2090 available options

- Vehicle and base Rapid Docking System (RDS) -125 W PEP
- Frequency Hopping (Subject to Export licence)
- Digital Voice & Data Encryption 56 bit DES & 256 bit AES (Subject to Export licence)
- Secure Call - ALE MIL-STD 188-141B
- Internal/external high speed data modems
- 3 kHz bandwidth filter (high speed data)
- Tactical solar power supply
- Hand crank generator
- Tactical headphones
- Tactical CW key
- Tactical broadband dipole
- Tactical wire dipole Antenna
- GPS receiver
- PC programming kit

## Multicam patrol pack

- The full pack provides for the PRC-2090 and various accessories including wire antennas and spare battery packs
- Made from 1000 denier nylon
- A pouch is provided to hold the PRC-2090's removable display and handset
- The side packs can be detached to make the pack more compact
- Note:- Solar panel bag shown on front of pack is optional and ships with the optional rapid deploy solar panel P/N 2090-03-08



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**Head Office:**  
Barrett Communications Pty Ltd  
47 Discovery Drive, Bibra Lake,  
WA, 6163 AUSTRALIA  
Tel: +61 8 9434 1700  
Fax: +61 8 9418 6757  
Email: [information@barrettcommunications.com.au](mailto:information@barrettcommunications.com.au)

