



BARRETT
COMMUNICATIONS

2050 HF SSB transceiver



- **Software Defined Transceiver Core**
- **Advanced Digital Signal Processing (DSP)**
- **Lightweight and compact design**
- **Detachable front panel for remote extended control operation**
- **Secure Digital Voice options**

The Barrett 2050 HF transceiver, the centrepiece of the 2000 series of HF communications equipment, combines current technology with the intuitive “ease of use” that has become synonymous with Barrett Communications equipment. When teamed with other 2000 series products the versatile Barrett 2050 transceiver provides secure email, data and telephone connectivity within a HF network and onwards to both the international telephone network and the internet.



www.barrettcommunications.com.au



New Software Defined Core

The new software defined core provides a much improved memory capacity and extends the life cycle and upgradability of the 2050. 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.

Advanced calling features

The 2050 transceiver is fully interoperable with a number of advanced digital selective calling systems commonly used by many peacekeeping and non-government organisations. The 2050 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.



Barrett 2050 HF transceiver front panel

Automatic Link Establishment (ALE) (optional)

The 2050 is available with full MIL-STD-188-141B 2G ALE (JITC certified) and FED-STD 1045 ALE. When selected, the 2050 offers full interoperability with all other military and commercial equipment complying with this standard plus enhanced telephone interconnectivity.

Detachable Front Panel

The 2050's Front control panel detaches from the transceiver unit enabling full remote and extended control operation up to 150m, allowing both convenient remote operation when deployed as a base station and trunk mount operation in a vehicle.



Barrett 2050 HF transceiver front panel

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 (optional)

The 2050 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 and pre-encrypted voice channels, regardless of 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 2050's rear panel connectors provide an auxiliary interface for external OEM voice crypto devices enabling operators to maintain interoperability between multi-vendor sourced security solutions.

Advanced frequency hopping (optional)

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.

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





Barrett 2050 HF transceiver with 2023 modem, 2022 Power supply and notebook PC running the Barrett 2020 Email fax and data system software

The 2050 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.

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.

Intuitive operation

Barrett's well known intuitive operator interface ensures the 2050 is very simple to operating. Principal key functions are performed using a large six key cluster on the advanced 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.

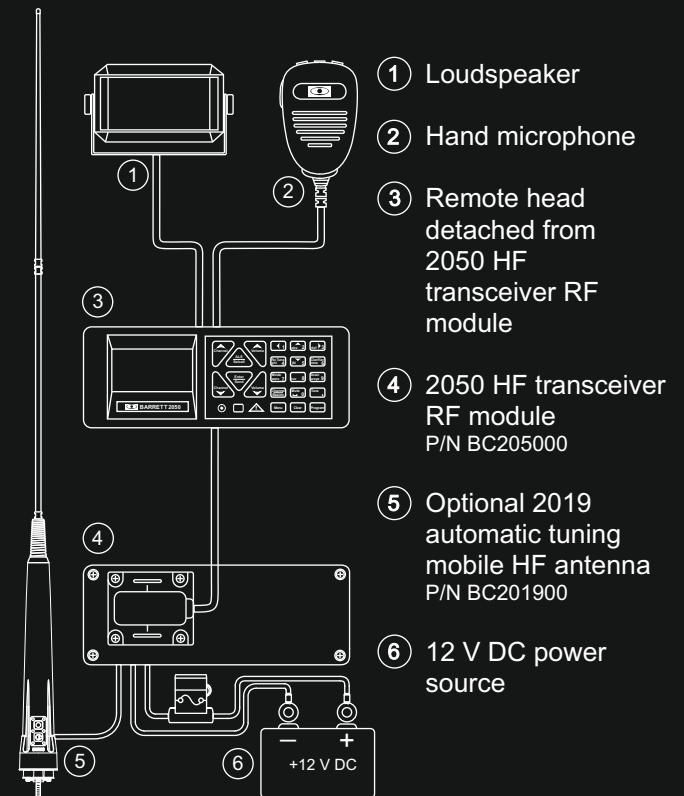
Second antenna connector

Allows each channel to select one of two antennas - ideal when long and short distance antennas are used.

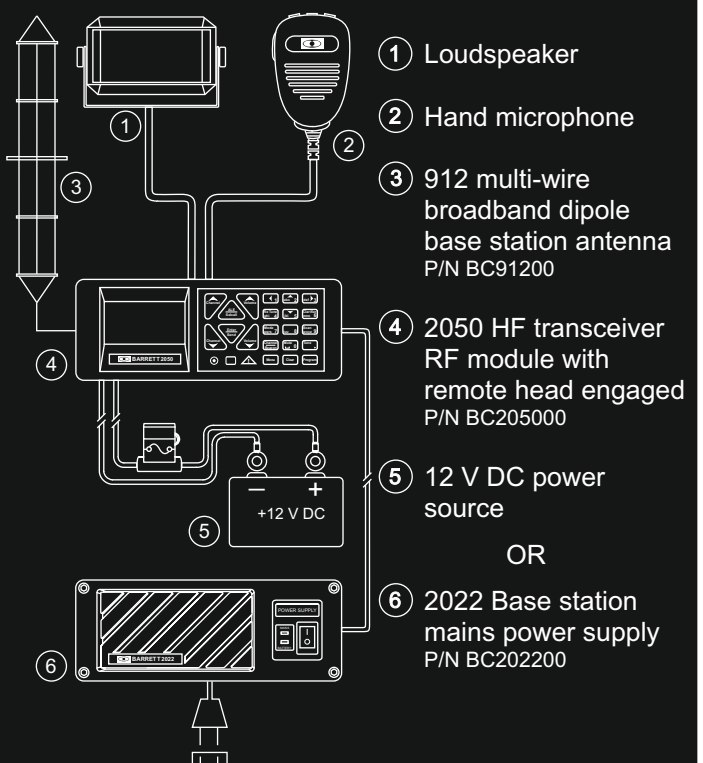
Lightweight and Compact Design

Using the latest lightweight alloys the 2050 weighs just 2.58kg. Its small physical size, one of the smallest on the market makes it easy to deploy anywhere as a base station or configure in a vehicle for mobile operation simplifying logistics of stocking the right transceiver for the right application. The 2050 meets MIL-STD 810G for drop, dust, temperature, shock and vibration.

Typical 2050 HF transceiver mobile configuration example



Typical 2050 HF transceiver base station configuration example





General specifications

Transmit frequency range	1.6 MHz to 30 MHz (continuous)
Channel capacity	Up to 500 programmable channels
Frequency stability	±0.5 ppm (±0.3 ppm optional)
Receive frequency range	250 kHz to 30 MHz (continuous)*
Frequency resolution	1 Hz tunable receiver
Frequency stability	±0.5 ppm (±0.3ppm optional)
Operating modes	J3E (USB, LSB) - H3E (AM) - J2A (CW) J2B (AFSK) Optional J2B (AFSK) with narrow filter
Operating temperature	-30°C to +70°C humidity 95% relative, non condensing
Frequency hopping	25 or 5 hops per second
Supply voltage	2050 -13.8 V DC (negative ground) polarity protected. Over voltage protected
Selcall system	Based on CCIR 493-4, four and six digit systems
Current consumption	470 mA standby (muted, back lighting off) Voice average less than 9 Amps typical Two tone less than 12Amps typical
Sensitivity	-120 dBm (0.224 uV) for 10 dB SINAD - J3E Mode
RF output power	125 W PEP voice ±1.5 dB or 30 W PEP voice ±1.5 dB or 10 W PEP voice ±1.5 dB
Duty cycle	100% two tone input signal with fan option
Programming	RS232
Standards	FCC approved – Part 90 Exceeds/complies with Australian/ New Zealand standard AS/NZS 4770:2000 and AS/NZS 4582:1999 EMC and vibration standard IEC 945 Complies with MIL-STD 810G for drop, dust, temperature, shock and vibration NTIA Approved

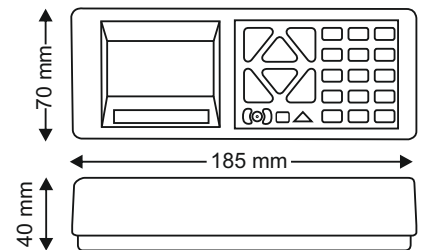
*reduced sensitivity 250 kHz to 500 kHz

Specifications are typical. Equipment descriptions and specifications are subject to change without notice or obligation.

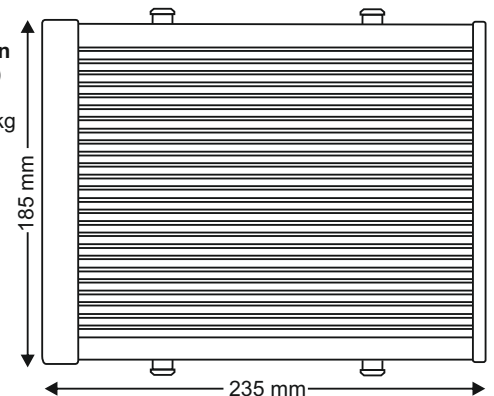
Summary of features and options

- Software Defined Core
- Advanced calling features
- Detachable Front Panel
- Enhanced DSP noise reduction
- Automatic Link Establishment (ALE) MIL STD 188-141B
- Internal High Speed Data modems options
- Secure Digital Voice, Data Encryption and scrambling options
- Advanced frequency hopping (optional)
- Lightweight and Compact Design
- BITE - Built-in Test Equipment
- Second antenna connector
- Direct dial telephone calls via the Barrett 2060 Automatic telephone Interconnect
- "SMS Pagecall" short text messaging
- 1.6 to 30 MHz continuous
- Intuitive and user-friendly interface
- 3 year warranty (Standard)
- Independent of all other communications' networks
- Free to air - no call costs

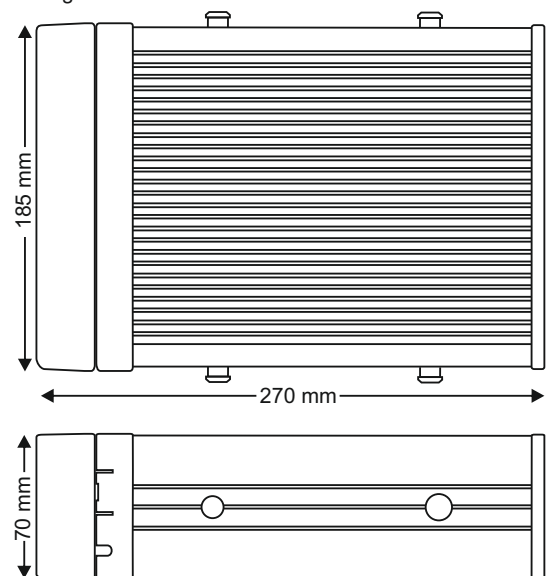
2050 remote control head
(trunk mount configuration)
Weight 0.22 kg



2050 remote configuration
(trunk mount)
main unit
Weight 2.36 kg



2050 local control configuration
Weight 2.58 kg



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