BARRETT 2000 SERIES
ADVANCED HF SSB TRANSCEIVERS

2050 HF SSB Transceiver Specifications

General Specifications

Standards Exceeds/complies with Australian/ New Zealand standard AS/NZS 4770:2000 and AS/NZS 4582:1999
Exceeds/complies with European standard ETSI 300 373 and associated Amendment A
Exceeds/complies with EMC and vibration standard IEC 945
Complies with MIL Spec. 810 F for drop, dust, temperature, shock and vibration.

Transmit frequency range	1.6 MHz to 30 MHz (continuous)
Receive frequency range	500 kHz to 30 MHz (continuous)
Channel capacity	Up to 500 programmable channels (simplex or semi-duplex)
Frequency resolution	10 Hz program mode 1 Hz tunable receiver
Frequency stability	±10 Hz or better than 0.3 PPM over temperature range - 30°C to + 70°C
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
Supply voltage	2050 -13.8VDC + 20% / - 10% (negative ground) Polarity protected. Over voltage protected Manpack 22VDC to 27VDC (100-260VAC or 11 16VDC with power adaptor
Current consumption	470mA standby (muted, back lighting off)
Selcall system	Based on CCIR 493-4, four and six digit systems. Protocol available for free distribution. Fully compatible with other major HF manufacturers four and six digit systems including encrypted systems.
Switching speed	Less than 15mS Tx to Rx, Rx to Tx

Receiver Specifications

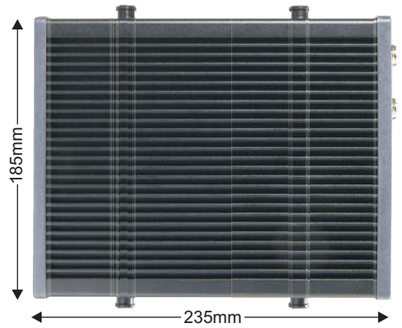
Sensitivity	-120dBm (0.224uV) for 10dB SINAD - J3E Mode pre-amp on -110dBm (0.708uV) for 20dB SINAD - J3E Mode pre-amp on
Selectivity J3E	-1 kHz and + 4 kHz better than 50dB -2 kHz and +5 kHz better than 55dB -5 kHz and +8 kHz better than 60dB
Selectivity J2B (optional)	-500 Hz and + 500 Hz better than 60dB The level of an unwanted signal above the level of a wanted signal that will reduce the SINAD of the wanted signal from 20dB SINAD to 14dB SINAD
Blocking	-20 kHz and +20 kHz better than 71dB - the level of an unwanted signal above the level of a wanted signal that will reduce the SINAD of the wanted signal by 6dB or cause an output level change of 3dB.
Intermodulation	better than 89dBµV - the level of two unwanted signals, that are within 30kHz of the wanted signal, above the level of a wanted signal that reduces the SINAD of the wanted signal to 20dB.
Spurious response ratio	Better than 70dB
Reciprocal mixing	Better than 105dBuV
In-band IMD	Better than 34dB
Audio output	4W into 4 Ohms at less than 2% distortion
Audio response	Less than 6dB variation from 350 Hz to 2700 Hz.
Input protection	Better than 30V RMS from a 50 Ohm source

Transmitter Specifications

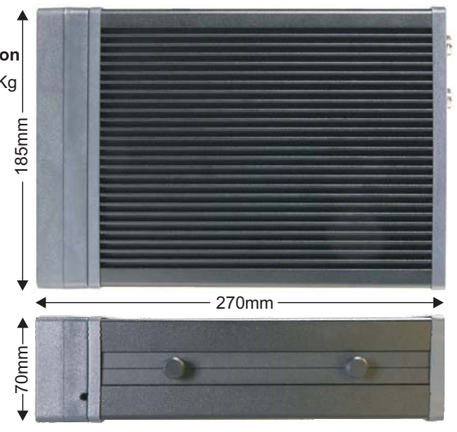
RF output power	125 watt PEP voice ± 1.5dB or 30 watt PEP voice ± 1.5dB or 10watt PEP voice ± 1.5dB
Duty cycle	100% two tone input signal with fan option
Intermodulation products	Better than -31dB below PEP (25dB below two tone peak)
Audio frequency response	Less than 6dB variation 350 Hz to 2750 Hz
Current consumption	Voice average less than 9Amps typical Two tone less than 12Amps typical

2050 remote control head
(trunk mount configuration)
0.22Kg

2050 remote configuration
(trunk mount)
main unit
2.36Kg



2050 local control configuration
2.58Kg



2050 HF SSB Transceiver

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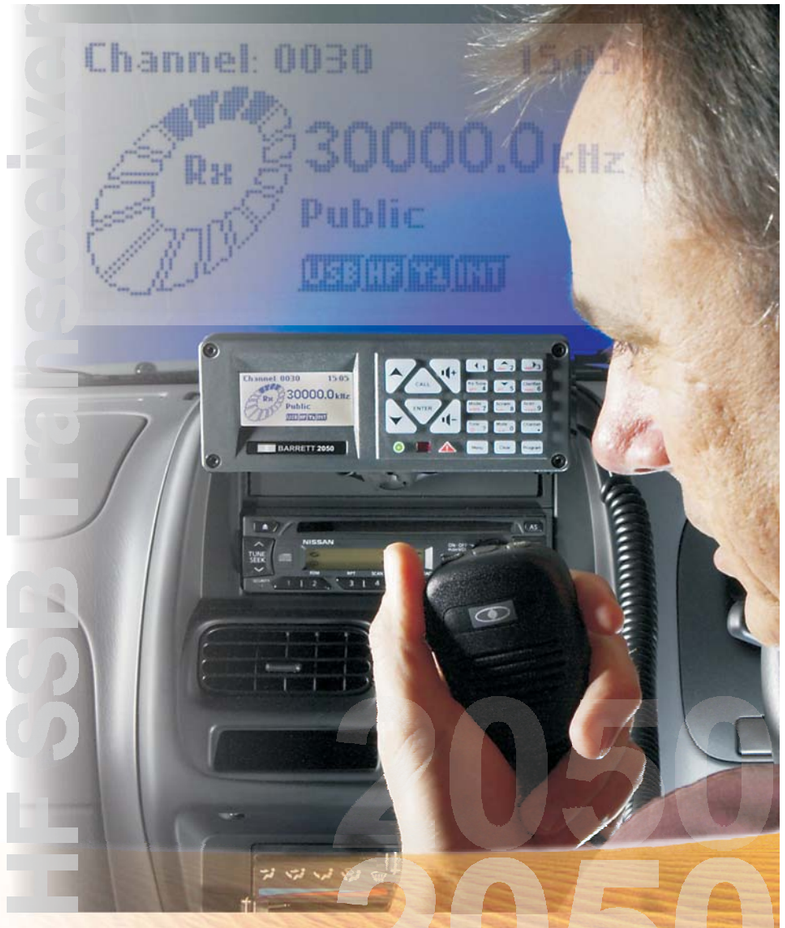
Defence Recognised Vendor
Australian Defence Industries

MADE IN AUSTRALIA

BCB205001/11
AS/NZS ISO 9001:2000 APPROVED BY BVQI

BARRETT 2000 SERIES
ADVANCED HF SSB COMMUNICATIONS

2050 HF SSB Transceiver



2050 HF SSB Transceiver

The Barrett 2050 HF transceiver, the centre piece 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.

In addition to providing all common modes of HF transmission, most currently used selective call formats and MIL STD 188-141B Automatic Link Establishment, the 2050 transceiver has a new generation, simple to operate, frequency hopping option.

The heart of the 2050 is a flexible soft-core processor and powerful DSP system that delivers superior reception and noise reduction while providing very low current consumption.

Housed in a lightweight, extremely strong sealed aluminum chassis, 2050 meets MIL STD 810F for drop, dust, temperature, shock and vibration.

The 2050 transceiver is packaged ready to operate as a desktop transceiver, and by adding the inexpensive "mobile pack" the 2050 becomes a mobile (trunk mounted) transceiver. This simplifies the logistics of holding base station and mobile transceivers within large organisations.

Teaming the versatile 2050 transceiver with other 2000 series products provides email, fax, telephone and data connectivity within an HF network and onwards to both the international telephone network and the Internet.

2050 2050 2050

www.barrettcommunications.com.au

AS/NZS ISO 9001:2000 APPROVED BY BVQI

2050 HF SSB Transceiver Features

2050 Front panel

Digital Signal Processing (DSP)

A single DSP chip provides modulation and demodulation of all on air signalling used in the ALE, selective call and syllabic mute processes and provides noise reduction of received signals.

Frequency hopping option

A simple to operate, unique frequency hopping system that has no network entry time or late entry time. Simply enter the hop band, cipher key number and talk.

2050 Rear panel

Simple architecture

The transceiver uses only two microprocessors, the main processor uses a soft loaded core while the second processor is used within the control head to operate the display and keypad.

Size and weight

Physically 40% smaller than our 900 series, the 2050 in a local control configuration measures only 185mm W x 270mm D x 70mm H and weighs less than 2.6kg.

Direct dial telephone calls

"Telcall" option provides direct dialing access with Barrett Communications HF Telephone Interconnects and most interconnects from other manufacturers.

"Secure Call"

An option that provides a medium level of voice encryption for message privacy.

ALE - Automatic Link Establishment

An embedded internal option fully interoperable with FED STD 1045 ALE systems. Also capable of full 16 digit telephone dialing (using FED STD 1045 ALE as the signalling medium) with Barrett 960 or Barrett 2060 ALE equipped telephone interconnects.

2020 Email Fax & Data System

GPS tracking

An option that supports connection to an external GPS receiver for tracking applications using the Barrett 977 tracking system.

HF email and data

The 2050 transceiver auxiliary connector is fully featured to interface to a variety of external modems including the Barrett 2020 HF email system and the Barrett 923 email and data system.

2050 Side View

Selective call options

Fitted with both a CCIR 493-4 based, four and six digit system of which the protocol is available for free distribution and an OEM protocol that is fully compatible with other major HF manufacturers four and six digit systems that utilise encryption.

"SMS Pagecall"

Allows short text messages to be sent from one 2050 transceiver to another. Barrett 2050 transceivers have alpha-numeric input keys (similar to mobile phones) that allow direct text message input (without the need for an external PC or Palm type input device)

BITE - Built In Test Equipment

Tests receiver performance, selcall, syllabic mute, VCO operation and serial communications port viability.

Programming by IR or serial port

For ease of programming in a vehicle a notebook computer loaded with the 2000 series programming package can load a transceiver's parameters without the need for cables through the remote head IR port.

2050 vehicle mounting options

Second antenna connector

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

2040 Manpack battery loading

2040 Manpack Adaptor with 2050 Transceiver fitted

Configuration Flexibility

The 2050 transceiver is packaged as a desktop (local control) transceiver and with the addition of the simple and inexpensive Mobile pack the 2050 is quickly reconfigured to a mobile (trunk mount) transceiver. This feature simplifies the logistics of stocking the right transceiver for the right application.

The modular design of the 2000 series of products as a whole enables a basic 2050 transceiver to adapt quickly and easily between base station, mobile, email, fax and data and manpack configurations.

DESK TOP CONFIGURATION ⟷ MOBILE CONFIGURATION

Manpack Configuration

Inserting the 2050 into the 2040 manpack adaptor, the complete unit becomes a lightweight (6.4kg) manpack transceiver with built-in automatic antenna tuner, battery management system and removable lithium ion battery cartridge. All connections such as handsets and auxiliary units are made through military specification connectors. Available with the manpack is a custom made backpack and frame assembly designed to hold the manpack, accessories normally used with the unit and other personal items.