BARRETT

HF Radio Communications

1 kW Automatic antenna tuner

The Barrett 1 kW automatic antenna tuner is designed to interface directly with Barrett Communications 2075 HF transceivers.

The Barrett 1 kW ATU automatically matches the 50 ohm output of the transmitting system to a wide variety of end-fed unbalanced antennas such as whips and long wires.

The tuner can provide tactical security by permitting remote location of the antenna up to 200 metres from the associated transmitter. A control interface specific to Barrett 2075 transceivers is resident inside the Barrett 1 kW ATU.

Upon initial tune, the antenna VSWR is monitored, and if it is outside a preset limit, the tuner will automatically initiate a tune cycle. Matching is accomplished and controlled by the intelligent tuning algorithm, which automatically arrives at the optimum tuner element setting for any specific antenna load impedance. The Barrett 1 kW ATU will tune almost any end-fed antenna within the specified frequency range provided an effective ground system is employed.

The Barrett 1 kW ATU is designed for continuous operation under severe environmental conditions. It is housed in a rugged, waterproof metal case that should be mounted as close as possible to the radiating part of the antenna.

Optional shock mounts may be used to mount the tuner to any convenient surface in a vehicle, on a ship, or in a base station configuration.

In addition to the first-time automatic tuning mode, the Barrett 1 kW ATU has a built-in 100-channel memory that allows "silent tuning" and permits a retune mode whereby the tuning elements are automatically repositioned to a predetermined condition in less than 20 mS. This "retune" mode is utilized when the associated radio system is operating in an ALE mode.

General Specifications

RF power input	1000 W, PEP or Average	
Duty cycle	All modes including data operation, within constraints of internal temperature (see temperature spec)	
Frequency range	1.6 to 30 MHz	
Tuning range versus antenna type	5 metre whip:	3 to 30 MHz
	10 metre whip:	2.5 to 30 MHz
	25 to 50 metre long wires:	1.6 to 30 MHz

Note: effective tuning requires the installation of an efficient grounding system in conjunction with the antenna

RF tune power required	10 W
Tune time	3 - 5 S, first tune (typical) , < 20 mS, memory tune
Input impedance	50 ohms
Input power requirements	28 V DC, 4 A peak, 1.8 A, average
Tuning accuracy	1.5:1 VSWR, typical
Memory channels	100

Environmental

Temperature (operating)	30° to +55°C (ambient inside case)

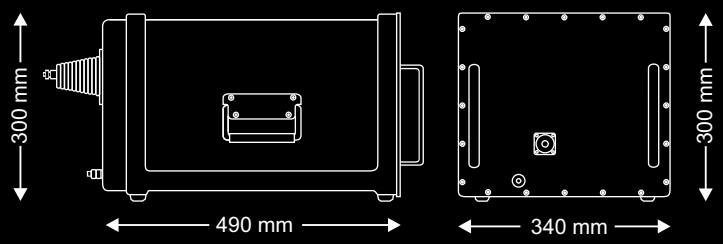
Note: this temperature can easily be exceeded if the case is exposed to direct sunlight. For FSK operation, it is important that the tuner is installed so that the case is not exposed to direct sunlight.

Shock, vibration	MIL-STD-810 (with shock mount)
Immersion	Waterproof; immersion to 1 metre
Humidity, fungus, sand & dust, salt, fog	MIL-STD-810

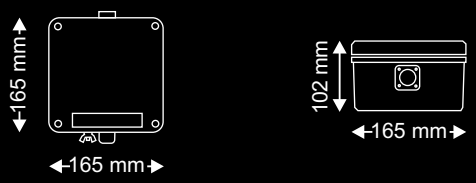
Controls and Indicators

Connectors	RF input, control input, RF output, grounding lug
Control interface	Specific to Barrett Communications series of HF transceivers

1 kW automatic antenna tuner BC207510 - 22 kg



1 kW automatic antenna tuner interface BC207511 - 2.2 kg



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