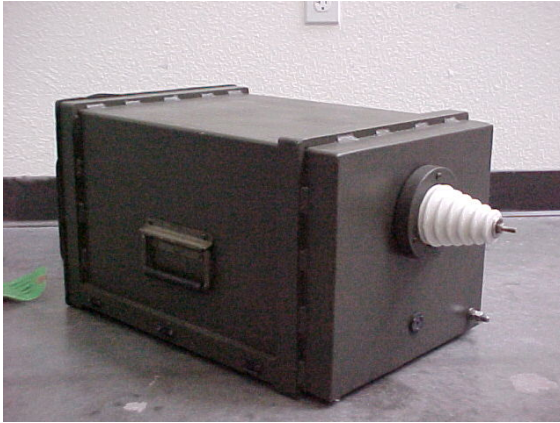


RAT1000C **1000W Antenna Tuner**



- **Completely Automatic Antenna Tuning**
- **100 Channel Memory for Rapid Tuning - ALE and Silent Tuning Applications**
- **1 kW Continuous Duty RF Power Rating (designed for use in data systems)**
- **Meets MIL-STD-810 for Environmental Performance**
- **Tunes Whips and Long Wire Antennas**
- **Control Interface to 7000-series Transceivers**
- **Completely Waterproof**

The RAT1000C is a 1kW automatic antenna tuner developed to interface directly with Datron's 7000-series of HF transceivers. It will also work with other HF transceivers providing the appropriate control interface is established. The RAT1000C is designed to automatically match 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 meters from the associated transmitter.

A control interface specific to the Datron 7000-series transceivers is resident inside the RAT1000C. The antenna VSWR is monitored, and if it is outside a preset limit, the tuner will automatically initiate a tune cycle. Matching is accomplished by a group of binary-related high-Q elements that are switched in and out of the circuit by high voltage relays controlled by the intelligent tuning algorithm. The optimum setting for any specific antenna load is arrived at by following a tuning algorithm with input derived from detector circuits that monitor the changing complex impedance presented by the tuner to the transmitter. The RAT1000C will tune almost any end-fed antenna within the specified frequency range provided an effective ground system is employed.

The RAT1000C 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 automatic tuning mode, the RAT1000C 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 msec.

SPECIFICATIONS (RAT1000C)

General	
RF Power Input	1000W, PEP or Average
Duty cycle	Continuous service, 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	16 foot whip: 3 – 30 MHz. 32 foot whip: 2.5 – 30 MHz. 75 to 150 foot long wires: 1.6 – 30 MHz. NOTE: effective tuning depends on setting up a good ground system in conjunction with the antenna
RF Tune Power from associated transceiver	10W
Tune time	3 – 5 secs, first tune (typical) < 20 msecs, Memory tune
Input Impedance	50 Ohms
Input Power Requirements	28Vdc, 4A peak, 1.8A, average
Tuning Accuracy	1.5:1 VSWR, typical
Memory Channels	100
Mechanical\Environmental	
Size	11.8" (30cm) x 13.4" (34cm) x 19.3" (49cm) (H x W x D)
Weight	48 lbs (22 kg)
Temperature (operating)	30 to +55 degrees, 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 3 feet
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 Datron's 7000 series of HF transceivers

Note: All specifications subject to change without notice



3030 Enterprise Ct.
Vista, CA 92081
www.dtwc.com

(760)-597-1500 (ph.)
(760)-597-1510 (fax)
sales@dtwc.com