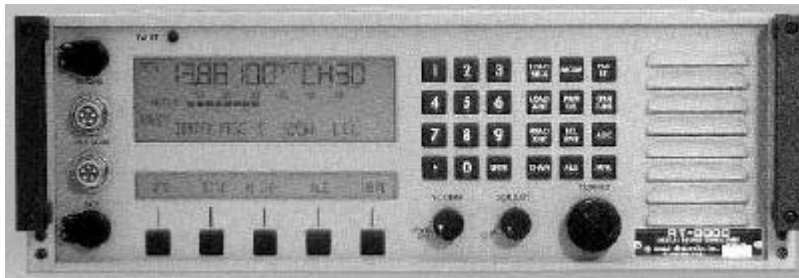


**RT-9000B/RT-9000A**  
**Digital HF/SSB Transceiver**  
**Product Information Sheet**



- **DIRECT DIGITAL SYNTHESIZER, 10 MS LOCK**
- **SELECTABLE AGC**
- **REMOTE OR COMPUTER CONTROL**
- **INTERNAL FED STD 1045 ALE OPTION**
- **KEYPAD ENTRY FOR 128 CHANNELS, MODE, AGC, POWER LEVEL, ETC.**
- **TWO SELECTABLE 600 OHM AUDIO PORTS**
- **COMPREHENSIVE BITE**
- **HIGH SPEED DATA CAPABILITY**
- **TADIL-A/LINK 11 SSB CAPABILITY**
- **AC POWER SUPPLY WITH AUTOMATIC CHANGEOVER TO 28 VDC**
- **LF/MF/HF/RECEIVER SCANNING**
- **PRE/POST SELECTOR PORTS**

The **RT-9000B/RT-9000A Digital HF/SSB Transceiver** combines powerful microprocessors and robust analog circuitry in a ruggedized package to meet the demands of today's HF data and voice networks. Its conservatively rated solid state RF power amplifier delivers 65 or 125 Watts PEP and Average power with a 100% duty cycle. The receiver utilizes a dual conversion technique employing a low-noise wide dynamic range front end. Modes of operation include USB, LSB, AME, CW, and Data (with external modems).

With the internal ALE modem, optional in the **RT-9000A**, the **RT-9000B/RT-9000A** provides Automatic Link Establishment per the interoperability requirements of MIL-STD-188-141A and Federal Standard 1045. The internal ALE modem eliminates the need for external controllers and PC workstations.

Data operating modes such as MIL-STD-203-1A TADIL-A/Link 11 (SSB operation per Paragraph 5.3.2) and MIL-STD-188-110A/B are accommodated using special delay compensated IF filters and other customized features that are standard in the **RT-9000B** and optional in the **RT-9000A**.

The **RT-9000B** is a factory configured version of the **RT-9000A** that includes the necessary options for ALE and high speed data operation.

A widescreen LCD presents the current operating status such as frequency, channel, mode, BFO, AGC, power, local or remote control. A bar graph meter selectively indicates S-meter, forward and reverse RF power and 600 ohm transmit and receive audio levels. A softkey menu LCD below the main display permits the operator to select a variety of features such as meter, speaker control, plus any custom features.

The **RT-9000B/RT-9000A** incorporates an improved comprehensive built-in-test (BITE) capability to the Lowest Replaceable Unit (LRU) sub assembly. Rear panel connections allow direct interfaces of the F-9800 Pre/Post Selector to overcome effects of co-location interference.

The power supply is of linear design reducing the undesirable effects of RFI and EMC. It accommodates both AC and 28 VDC (12 VDC with the PS-9010 converter) inputs via separate connectors and automatic changeover if the AC power fails.

# RT-9000B/RT-9000A

## Digital HF/SSB Transceiver Product Specifications

**RT-9000A Sunair P/N:** 8112001294  
**RT-9000B Sunair P/N:** 8128001281

**NSN:** 5820-01-334-1218  
**NSN:** Not Assigned

### GENERAL

**FREQUENCY RANGE:** TX: 1.6 to 29.99999 MHz  
RX: 100 kHz to 29.99999 MHz  
**PROGRAMMABLE CHANNELS:** 128 Simplex or half-duplex  
**FREQUENCY STABILITY:**  $\pm 1 \times 10^{-6}$  (Optional oven  $\pm 1 \times 10^{-8}$ )  
**MODES OF OPERATION:** USB, LSB, AM, CW, and DATA (with external modems)  
**MEMORY RETENTION:** Non-volatile  
**SCAN:** Manual or Automatic  
**BFO:**  $\pm 1.99$  kHz, 10 Hz resolution  
**SYNTHESIZER LOCK:** 10 ms  
**T/R SWITCHING TIME:** 10 ms  
**REMOTE INTERFACE:** RS-232/422 (FSK Tone optional)  
**RF INPUT/OUTPUT IMPEDANCE:** 50 ohms nominal, unbalanced.  
**BITE:** Fault isolated to module level (LRU), descriptive readout on front panel and individual module indication.  
**INPUT POWER:** DC: 26VDC  $\pm 15\%$   
AC: 115/230 VAC 15%, 47-400Hz  
AC/DC Auto changeover  
**DIMENSIONS:** INCHES (CM): 5.96" H (15.2) x 17.83W (45.4) x 17.66"L (44.9)  
**WEIGHT LBS (KG):** 49 (22.3)  
**CONSTRUCTION:** Modular plug-in assemblies.

### ENVIRONMENTAL

**TEMPERATURE:** -30°C to +50°C  
**HUMIDITY:** 100% at 50°C  
**RAIN:** MIL-STD-810F, Method 506.4  
**SHOCK:** MIL-STD-810F, Method 516.5 Procedure 1  
**VIBRATION:** MIL-STD-810F, Method 514.5  
**MTBF/MTTR:** 6,500h/15min

### RECEIVER

**SELECTIVITY:** SSB: RT-9000B 300-3300 Hz @6dB  
SSB: RT-9000A 300-3000 Hz @6dB  
CW: 500 Hz @ 3dB, centered at 1 kHz  
AM:  $\pm 3000$  Hz @ 6dB  
**SENSITIVITY:** SSB: 0.5uV for 10dB (S+N)/N  
AM: 3.0uV for 10dB (S+N)/N  
CW: 0.3uV for 10dB (S+N)/N  
**AUDIO OUTPUT:** 5 watts into internal speaker <5% THD  
Two selectable lines at -20dBm to 10dBm into 600 ohms  
Headset low impedance  
**IMAGE & IF REJECTION:** 80 dB minimum  
**SPURIOUS REJECTION:** 80 dB minimum  
**AGC ATTACK TIME:** 10 ms nominal  
**AGC RELEASE TIME:** Fast - 30 ms nominal  
Medium - 200  $\pm$  100 ms  
Slow - 3  $\pm$  1 sec

**SQUELCH:** Syllabic

**ANTENNA INPUT PROTECTION:** 100 VRMS, self-resetting  
**INTERNAL GENERATED SPURIOUS:** 99.5% of the available frequencies from 100 kHz to 30 MHz at or below 0.5  $\mu$ V equivalent input at the antenna terminal.

### TRANSMITTER

**OUTPUT POWER:**

**NORMAL:** SSB: 125 Watts PEP and Average  
CW: 125 Watts  
AME: 40 Watts carrier  
**LOW:** SSB: 65 Watts (adj)  
CW: 65 Watts (adj)

**HARMONIC SUPPRESSION:** -45 dB second order, -55 dB third and higher order. When the CU-9125 coupler is used in a 125 Watt system with a proper antenna configuration, the measured suppression of the second and third order harmonics is greater than 60 dB. When the CU-9150 coupler is used in a 1 kW system with a proper antenna configuration, the measured suppression is greater than 70 dB.

**INTERMODULATION DISTORTION:** 36 dB below PEP

**CARRIER SUPPRESSION:** 50 dB below PEP

**UNDESIRE SIDE BAND:** 50 dB below PEP @ 1 kHz

**HUM & NOISE LEVEL:** 50 dB below PEP

**VSWR:** Operates at VSWR 2.0:1 (Automatic power reduction above 2.0:1)

**AUDIO INPUT:** Microphone, two selectable 600 Ohm lines

**AUTOMATIC LEVEL CONTROL:** 125 Watts  $\pm 1$  dB

**AUDIO COMPRESSION:** 10 dB nominal (Internal Disable)

### INTERNAL OPTIONS

**RT-9000A:**

**INTERNAL ALE:** MIL-STD-188-141A/FED-STD-1045 Interoperable Automatic Link Establishment Processor

**REMOTE CONTROL:** 300 bps FSK Modem Card

**SPECIAL FILTERS:** DATA, CW, FSK to specification

**RT-9000B/RT-9000A:**

**HIGH STABILITY:** Oven Controlled Oscillator  $\pm 1 \times 10^{-8}$

### PERIPHERAL EQUIPMENT

**PRE/POST SELECTOR:** F-9800

**1 KW/500W POWER AMPLIFIER:** LPA-9600/LPA-9500

**ANTENNA COUPLERS:** 1kW/CU-9150 or  
125W/CU-9125/CU-2430

**REMOTE CONTROL:** PATHFINDER II or RCU-9310 Control Unit

**DC CONVERTER:** PS-9010 12VDC to 28VDC Converter

*Specifications subject to change without notice.*



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