

**RF-1140C Series****1 KW HF-ISB  
TRANSMITTER**

*a DSP-based  
high performance,  
1kW HF Transmitter*

The RF-1140C consists of the RF-5570 Exciter, the RF-1110D Power Amplifier, and the RF-1124D Power Supply and is ideally suited for very high performance fixed, transportable, or shipboard applications. The RF-5570 Exciter is DSP-based and provides a high signal-to-noise ratio and superior spectral purity, which can be even further enhanced via an optional internal postselector. The power amplifier uses the latest MOSFET technology for very low distortion and high key-down "around-the-clock" reliability, and the power supply provides a high power factor, minimizing prime power demands.

Complete coverage of the 1.6 to 29.99999 MHz frequency range is provided in 1 Hz increments. Modes of operation include USB, LSB, two-channel ISB, FSK, CW, and AME. Low delay distortion DSP filters for high-speed data applications, including LINK-11, are standard.

A redundant modular architecture allows the unit to continue functioning at reduced power in the event one of the identical power amplifier or power supply modules malfunctions.

The built-in line flattener provides for full power operation into 3:1 or better antenna VSWR, and reduced power operation for VSWRs greater than 3:1.

Full remote control and monitoring capability is provided via an asynchronous serial data interface in accordance with RS-422 standard. Controllable functions include frequency, mode, keying, power output, channel programming and selection, and BITE.

Built-in test diagnoses and isolates malfunctions to the module level. For fast switching systems, such as Link II, a high-speed T/R switch is available. The RF-1140C HF-ISB Transmitter is fully compatible with the RF-2601 Fast-Tune Antenna Coupler which provides matching of 15- to 35-foot whip antennas, and long-wire antennas with the optional RF-625A Long-Wire Adapter.



**General**

|                                   |  |
|-----------------------------------|--|
| <b>Frequency Range</b>            | 1.6 to 29.99999 MHz in 1 Hz increments   |
| <b>Frequency Stability</b>        | 1 part in 10 <sup>8</sup> for any 24-hour period using the internal standard   |
| <b>Channel Memory</b>             | 100 channel capacity, capable of being loaded locally or remotely with complete exciter parameters                             |
| <b>Standard Modes</b>             | USB (J3E, A3J or R3E, A3A) FSK (F2B, F2)<br>LSB (JE3, A3J or R3E, A3A) CW (A1A, A1)<br>ISB (B8E, A3B) 2 channel AME (H3E, A3H) |
| <b>FSK Shifts</b>                 | Selectable: 85, 170, and 850 Hz  |
| <b>Power Output</b>               | 1kW PEP and average (Adjustable to -50 dB in 1 dB steps) for antenna VSWR ≤3:1. Reduced power output for antenna VSWR >3.0:1   |
| <b>Sideband Characteristics</b>   | ≤3 dB 300 to 3050 Hz, Link II-compliant delay distortion   |
| <b>Intermodulation Distortion</b> | 36 dB minimum below PEP  |
| <b>Sideband Suppression</b>       | -60 dB   |
| <b>Harmonic Suppression</b>       | -55 dB   |
| <b>Spurious Suppression</b>       | -80 dB   |
| <b>VSWR Protection</b>            | Stable and fully protected for all VSWR conditions   |
| <b>Tuning Time</b>                | Memory Tune: Less than 1 second<br>Learn Tune: 2.2 seconds typical, 6 seconds maximum  |

**Environmental**

|                    |  |
|--------------------|--|
| <b>Temperature</b> | -10°C to +55°C (operating); -40°C to + 71°C (non-operating)  |
| <b>Humidity</b>    | 0 to 95% RH, non-condensing per MIL-STD-810E, Method 507.3<br>Procedure III – Aggravated   |
| <b>Shock</b>       | ASTM D1093-91, Section 10.1.3 Method C, Raised Edge Free Fall Drop Test.<br>Drop height of 6 inches when secured to shipping pallet. |
| <b>Vibration</b>   | MIL- STD-810E, Method 514.4 Procedure I when secured to shipping pallet.<br>(non-operating)  |

**Installation**

|                          |  |
|--------------------------|--|
| <b>Power Supply</b>      | 187 to 253 VAC, 47 to 63 Hz, single phase<br>Other line voltages available by special order. |
| <b>Power Consumption</b> | 4900 watts, 5450 VA maximum (0.9 power factor minimum)                                       |
| <b>Size</b>              | 50H x 22W x 30 inches<br>(127H x 56W x 76D cm)   |
| <b>Weight</b>            | 320 lbs (145 kg) (RF-1140C-03)   |

**RF-1140C Configurations**

| Version     | Power Supply | Rack     | Line Voltage        | Notes                          |
|-------------|--------------|----------|---------------------|--------------------------------|
| RF-1140C-03 | RF-1124D-01  | standard | 220 single phase    | standard 1 kW Tx in rack       |
| RF-1140C-04 | RF-1124D-02  | standard | 208 3 phase         | special order 1 kW Tx in rack  |
| RF-1140C-05 | RF-1124D-02  | standard | 380 to 440 3 phase* | special order 1 kW Tx in rack  |
| RF-1140C-06 | RF-1124D-01  | none     | 220 single phase    | special order 1 kW Tx w/o rack |
| RF-1140C-07 | RF-1124D-02  | none     | 208 3 phase         | special order 1 kW Tx w/o rack |
| RF-1140C-08 | RF-1124D-02  | none     | 380 to 440 3 phase* | special order 1 kW Tx w/o rack |

\*Includes RF-1143 Isolation Transformer.  
Specifications are subject to change without notice.

