

## RACAL COMMUNICATIONS, INC.



- 1.0 to 32 MHz
- High Out of Band Signal Immunity
- Three Selectable Bandwidths
- 75 dB In-Band Dynamic Range

# RA6840 HF WIDEBAND RECEIVER

The RA6840 is a wideband version of the highly reliable and field proven RA6830 HF receiver. Operating over a frequency range of 1.0 to 32 MHz, the new RA6840 offers three selectable bandwidths up to a maximum of 3 MHz, each with at least a 2:1 shape factor as standard for the 80 dB and 3 dB bandwidths. Other filter characteristics are available by special order. The receiver has very-low-noise local oscillators that are synthesized from an internal or external standard. Tuning over the frequency range is accomplished in 10 kHz increments.

Receiver gain is adjustable in 2 dB steps using a system of switchable amplifiers and attenuators designed for exceptional noise figure and dynamic range characteristics. Alternate outputs at baseband or IF are available.

## TECHNICAL SPECIFICATIONS

### FREQUENCY RANGE

1.0 to 32 MHz

### FREQUENCY TUNING

By keyboard entry, continuous tuning, or by remote control in 10 kHz steps.

### FREQUENCY INDICATION

4 digit electronic readout to 10 kHz.

### NOISE FIGURE

18 dB max at maximum gain  
25 dB max at 25 dB gain

### MAXIMUM GAIN

Receiver noise raised to rated output

### GAIN CONTROL

124 dB in 2 dB steps  
Accuracy  $\pm 2$  dB, Stability  $\pm 1$  dB

### INTERMODULATION

Out of Band Intercept Points:  
Second Order: +60 dBm  
Third Order: +35 dBm for signal separation of at least 1 IF bandwidth  
In Band -75 dB min referenced to composite signals  
100 mV peak. *+27.5 dBm*

### PRIMARY POWER

115/230 volt  $\pm 10\%$   
47-420 Hz single phase  
45 watts nominal

### REAR PANEL CONNECTORS

Antenna BNC  
IF Output BNC  
REF In/Out BNC  
Baseband Out (optional) BNC  
Power

### OPTIONS AVAILABLE

- Remote Control  
Full remote control of all receiver functions by either:
  1. Serial asynchronous ASCII character oriented with strap selectable baud rate of 50 to 19200 baud, selectable MIL-STD-188C or EIA Standard RS-232C/RS-422/RS-423 compatible 2 byte serial.
  2. Byte serial bit parallel IEEE standard 488C-1978.
- High level IF Output Module
- Baseband Converter

### FREQUENCY STABILITY

Internal oscillator  $\pm 5$  parts per  $10^8$  per  $10^0$  C  
External oscillator  
Selectable 1, 5, 10 MHz input

### OSCILLATOR PHASE NOISE

-114 dBc at  $\pm 10$  kHz  
-140 dBc at  $\pm 100$  kHz

### SELECTIVITY

Up to three IF filters provided  
Maximum bandwidth 3 MHz  
Standard Filter characteristics are:

	-3 dB	-80 dB
FL1	1 MHz	2 MHz
FL2	2 MHz	3 MHz
FL3	3 MHz	4.5 MHz

### CROSS MODULATION

Out of Band:  
Level of interfering signal 1 MHz out of band is -5 dBm.  
To cross modulate on in band signal: 0.035% (sidebands -75 dBc)  
In Band: A 50% AM in band signal at rated output levels will cross modulate an in band carrier 0.035% (sidebands -75 dBc)

### IMAGE AND SPURIOUS

Greater than 80 dB  
1 MHz out of band

### INTERNAL SPURIOUS

120 dBm

### DIMENSIONS

Suitable for 19 inch rack mounting  
(2 per common carrier)  
Height 5 1/4 inches  
Width 8 1/2 inches  
Depth 22 inches  
Weight 25 lbs

### ENVIRONMENTAL

Operating Temperature 0 to 50 deg C  
Operating humidity 10% - 95%  
Altitude Operation to 15000 ft  
Bench Handling MIL-STD-810C  
Method 516.2 proc. V  
Vibration MIL-STD-810C  
Method 514.2 proc X.  
Storage Conditions  
Temperature -40 to +70 deg C  
Altitude 40000 ft

ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTIFICATION

## RACAL COMMUNICATIONS, INC.

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