

RACAL COMMUNICATIONS, INC.

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



RA6840 HF Wideband Receiver

Description

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 Alternative bandwidths up to a maximum of 3 MHz. Typically, IF filter have at least a 2:1 shape factor as standard for the 80 dB and 3 dB bandwidths. Other filter characters are available by special order. The receiver has a "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 remote control in 10 kHz steps

Frequency Indication

4 digit electronic readout to 10 kHz

Noise Figure

18 dB maximum at maximum gain
22 dB maximum for all attenuator settings 0 - 60 dB

High Level IF Output

+10 dBm into 50 ohms at final intermediate frequency (See Selectivity table for center frequency)

Baseband Converter

10 volts peak to peak into 1000 ohm load or 2 volts peak to peak into 50 ohm load at distortion defined in inter-modulation specifications

Maximum Gain

Receiver noise raised to rated output

Gain Control

124 dB in 2 steps
Accuracy ± 2 dB
Stability ± 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 referred to composite signals 100 mV peak

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
Power(Optional) BNC

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 488-C-1978.
- High level IF Output Module
- Baseband Converter

Frequency Stability

Internal oscillator ± 5 parts per 10
per 10° C external oscillator
Selectable 1, 5, 10 MHz input

Oscillator Phase Noise

-114 dBc at ± 10 kHz
-140 dBc at ± 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)

Image and Spurious Response

Greater than 80 dB
1 MHz out of band

Internal Spurious Response

120 dBm

Size and Weight

Suitable for 19 inch rack mounting (2 per common carrier)
5-1/4 x 8-1/2 x 22 "
25 lbs

Environmental

Operating Temperature:
 0° to 50° C
Humidity:
10% - 95%
Altitude Operation to 15000 ft
Bench Handling MIL-STD-810C Method 516.2 proc X
Storage Conditions:
Temperature -40° to $+70^\circ$ C
Altitude 40000 ft

All specifications are subject to change without notification

RACAL COMMUNICATIONS, INC.

5 Research Place, Rockville, Md. 20850 (301) 948-4420 Telex 898-456 Cable RACAL USA
WEST COAST OFFICE — 2995 Woodside Road, 400-671, Woodside, Ca. 94062 (415) 851-3391

RACAL