

1.3.3 **OPTIONAL EQUIPMENT**

The following optional equipment is available for use with the WJ-8626A-4 HF Receiver. For additional information concerning these options and others, contact the Watkins-Johnson Company, Gaithersburg, Maryland, or your Watkins-Johnson representative.

- Sub-Octave Preselector WJ-8626A-4/PRE
- Wideband 455 kHz Signal Monitor Output (30 kHz BW), (standard output is 16 kHz BW) WJ-8626A-4/SMO30
- Master/Handoff WJ-8626A-4/MH
- FSK Demodulator WJ-8626A-4/FSK
- Stand Alone Power Supply WJ-8626A-4/MPS
- F1/F2 Sector Scan WJ-8626A-4/SCAN
- Baseband Converter WJ-8626A-4/BBC
- Wideband 10 MHz Output (100 kHz BW) WJ-8626A-4/WBO

1.4 **EQUIPMENT SPECIFICATIONS**

See Table 1-1 for WJ-8626A-4 HF Receiver specifications and Table 1-2 for IF bandwidth options and sensitivity levels.

Table 1-1. WJ-8626A-4 HF Receiver Specifications

| | |
|--|---|
| Tuned Frequency | 5.0 kHz to 30.00000 MHz |
| Tuning Resolution | 10 Hz |
| Synthesizer Tuning Speed | 15 ms, typical |
| Antenna Conducted Local Oscillator Radiation | -87 dBm, maximum |
| Antenna Input Protection | The antenna input will withstand the effects of RF power to +27 dBm and static build-up. The protection circuit automatically resets. |
| Input Impedance | 50 ohms, unbalanced, nominal |
| IF Bandwidths (3 dB) | Standard: 2.85 kHz; Optional: any four of the following: 0.2, 0.5, 1, 2, 3, 4, 6, 8, 12 or 16 kHz; USB, LSB |
| Detection Modes | Standard: FM, AM, CW, LSB and USB |
| Gain Control Modes | Manual, AGC |
| AGC and Manual Range | 90 dB, minimum |
| AGC Threshold | 3.0 microvolt, typical |
| AGC Attack Time | 15 ms, maximum |
| AGC Release Time | FAST = 100 ms, maximum; SLOW = 2-4 Sec., nominal |
| Synthesized BFO | ±8.0 kHz in 100 Hz steps |
| IF Rejection | Greater than 90 dB |
| Image Rejection | Greater than 90 dB |

Table 1-1. WJ-8626A-4 HF Receiver Specifications (Continued)

| | |
|---|---|
| Sensitivity | See IF Options and Sensitivity Table |
| IF Output | 455 kHz, 20 mV into 50Ω, minimum, at 3 micro-volt input level, IF BW limited |
| Signal Monitor Output | 455 kHz, center frequency, 17 kHz bandwidth, 50Ω, output impedance |
| Third Order Input Intercept Point | +20 dBm, minimum for signals separated by 30 kHz minimum. |
| Video Amplifier Response | Within 3 dB from 20 Hz to 1/2 IF Bandwidth |
| Video Output Level | 350 mV rms into 75 ohms |
| Video Distortion | Less than 5% total Harmonic Distortion in AGC or Manual Gain Modes |
| Phones Output | 10 mW minimum into 600 Ω phones |
| Signal Strength Output | Shaped DC AM Detector output, 0 to +10 Vdc |
| Squelch/COR | Adjustable threshold from noise level to 80 dB above noise. COR holds a nominal 4 seconds after carrier disappears. |
| Digital Control | 72 Bit Serial Word (WJ-9040 System compatible) |
| Environmental Conditions: | |
| Temperature, Operating | 0° to +50°C |
| Size | 5.2 inches (132 mm) high, 8.0 inches (203 mm) wide and 14.38 inches (365 mm) deep |
| Weight | Approximately 17 lbs (7.7 kg) |
| Power Consumption | Approximately 15 watts (From +8.2, ±18.3, +29 VDC) |

Table 1-2. IF Bandwidth Options and Sensitivity Levels

| | 3 dB IF Bandwidth | IF Shape Factor (Typical) 50 dB:3 dB | RF input Level Microvolts dBm |
|---------------------------------|-------------------|--------------------------------------|-------------------------------|
| WJ-9926A/200 | 200 Hz | 10:1 | 0.50 -113 |
| WJ-9926A/500 | 500 Hz | 7:1 | 0.64 -111 |
| WJ-9926A/1K | 1 kHz | 5:1 | 0.80 -109 |
| WJ-9926A/2K | 2 kHz | 3:1 | 1.0 -107 |
| WJ-9926A/3K | 3 kHz | 3:1 | 1.4 -104 |
| WJ-9926A/4K | 4 kHz | 3:1 | 1.6 -103 |
| WJ-9926A/6K | 6 kHz | 3:1 | 2.0 -101 |
| WJ-9926A/8K | 8 kHz | 3:1 | 2.2 -100 |
| WJ-9926A/12K | 12 kHz | 3:1 | 2.9 -98 |
| WJ-9926A/16K | 16 kHz | 2:1 | 3.2 -97 |
| WJ-9926A/USB | 2.85 kHz | 1.8:1 | 0.7 -110 |
| WJ-9926A/LSB | 2.85 kHz | 1.8:1 | 0.7 -110 |
| WJ-9926A/SSB (uses offset L.O.) | 2.85 kHz | 1.8:1 | 0.7 -110 |

Table 1-2. IF Bandwidth Options and Sensitivity Levels (Continued)

NOTE: Over the frequency range of 0.2 to 30 MHz, the RF input levels and IF Bandwidths specified above will:

1. Produce a minimum AM (S+N)/N ratio of 10 dB at the audio output for 50% AM modulation at a 400% Hz rate, (1 kHz and wider IF Bandwidths).
2. Produce a minimum CW (S+N)/N ratio of 16 dB at the audio output.
3. Produce a minimum FM (S+N)/N ratio of 17 dB at the audio output (10 kHz and wider IF Bandwidth).
4. Produce a minimum USB/LSB (S+N)/N ratio of 10 dB at the audio output (SSB Filters only).

Over the frequency range of 5 kHz to 200 kHz, the following applies:

CW Sensitivity (1 kHz IF Bandwidth)

| | |
|------------------------|---|
| 200 kHz - 30 MHz | A 0.8 microvolt signal will produce at least a 16 dB (S+N)/N ratio at the audio output. |
| 50 kHz - 200 kHz | A 1.8 microvolt signal will produce at least a 16 dB (S+N)/N ratio at the audio output. |
| 15 kHz - 50 kHz | A 7.1 microvolt signal will produce at least a 16 dB (S+N)/N ratio at the audio output. |
| 5 kHz - 15 kHz | A 128 microvolt signal will produce at least a 16 dB (S+N)/N ratio at the audio output. |

When the optional switched sub-octave preselector option is installed, receiver sensitivity is decreased by 2 dB, maximum.