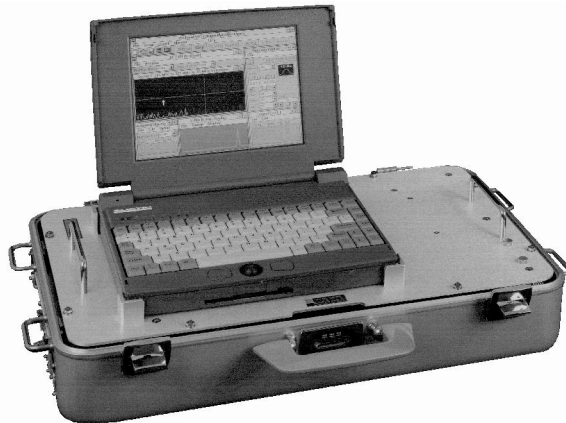# Developmental Specification

WATKINS-JOHNSON

May 1996

RF Acquisition & Monitoring System WJ-8932-1MD

The WJ-8932 is a portable RF acquisition and monitoring system. It allows the acquisition, monitoring, and collection of RF signal intelligence using two VHF/UHF receivers. The system software allows an operator to use the receivers independently for monitoring and collection or together as a hand-off system. The basic system frequency range is 20 to 512 MHz, with monitor receiver operations up to 1000 MHz, and optional extensions both downward and upward. The WJ-8932-1MD mounts in a rugged-aluminum carrying case weighing less than 35 pounds. The system becomes operational by merely opening the case, attaching an RF input and supplying either 120 VAC or 12 VDC power.

A color notebook PC controls the WJ-8932-1MD system using WJ-Receiver Control Software (WJ-RCS™). WJ-RCS is a windows application that allows an operator to use the two receivers independently for spectral acquisition, spectral collection, priority acquisition or priority collection. The receivers can also be used together for handoff acquisition.

Spectral receiver operations provide graphical, real-time amplitude-versus-frequency displays of RF or IF spectral data. The operator can tune either receiver by pointing and clicking on a graphic display. Virtual buttons offer a single-click method of adding signals to priority search or lockout lists. During priority search, the discrete signals of interest are portrayed as bars on a bar graph-style display showing the amplitude of each priority signal.

Features

❏ *Dual-receiver VHF/UHF System*
   Fast-acquisition Receiver: WJ-8607A
   Monitor Receiver: WJ-8654

❏ *Basic system frequency coverage*
   Acquisition: 20 to 512 MHz
   Monitor: 20 to 1000 MHz

❏ *RF panoramic display*

❏ *IF panoramic display*

❏ *Auto signal hand-off*

❏ *WJ RCS™ Miscrosoft® Windows control application*

❏ *Color PC as system controller*

❏ *Digital audio storage on PC*

❏ *Optional UHF-extended coverage*
   Acquisition: 2 to 3000 MHz
   Monitor: 0.5 to 1000 MHz or
   2 to 2400 MHz

HEIGHT 6.5 in (16.51 cm)	**DEPTH** 13 in (33.02 cm)
WIDTH 21 in (53.34 cm)	**WEIGHT** <35 lbs (15.91 kg)*
	<40 lbs (18.18 kg)**

 *Standard
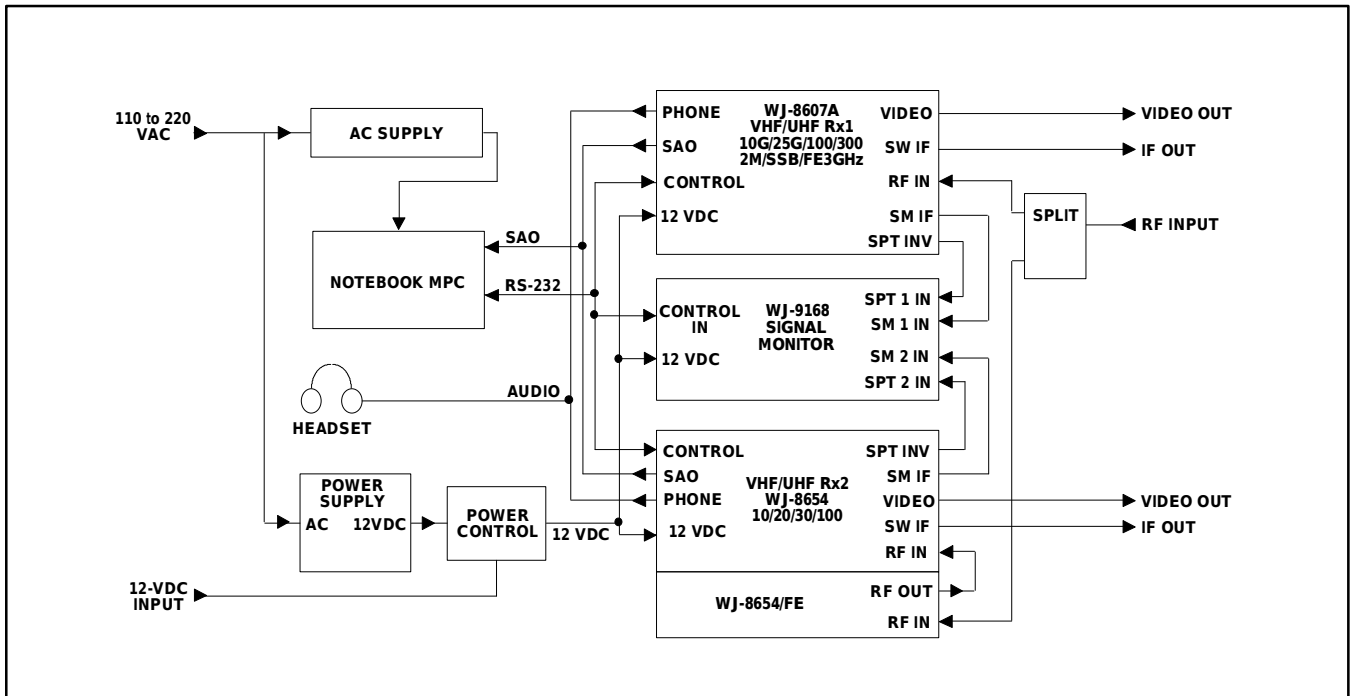**All options

Restricted International Distribution

WJ-RCS is included as standard software with the WJ-8932-1MD and is described fully in a separate document.

A special capability of the WJ-8932-1MD system is auto-handoff. The auto-handoff application tasks the WJ-8607A Fast-acquisition Receiver to continually perform high-speed spectral searches for signals over a user-defined threshold. When the WJ-8607A finds a signal, it hands it to the WJ-8654 Monitor Receiver for operator identification. A WJ-9168 Signal Monitor Module assists with signal identification by displaying an IF-pan presentation on the PC screen.

The Digital Audio Storage supports the storage of audio on the notebook PC in a digital format. This provides a means of recording audio data from the receivers onto the notebook PC, and storing over six hours of audio. The associated option-software package includes an audio playback application that allows an operator to play back the collected data by time sequence or collected signal frequency. The system stores audio data as WAVe files. This allows an operator to play and analyze the data using commercial Windows audio packages.

WJ-8932-1MD Block Diagram

WPG140

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System Specifications

Frequency Range*
Acquisition Receiver (WJ-8607A) ....20 to 512 MHz (tuning to 2 MHz allowed)
Acquisition Receiver with FE option (WJ-8607A /FE) ....20 to 2000 MHz (tuning to 2 MHz allowed)
Monitor Receiver (WJ-8654) ....20 to 1000 MHz (tuning to 2 MHz allowed)
Monitor Receiver with FE option (WJ-8654 /FE) ....20 to 2400 MHz (tuning to 2 MHz allowed)
Monitor Receiver with HFE option (WJ-8654 /HFE) ....0.5 to 1000 MHz (tuning to 0 MHz allowed)

Acquisition Receiver Sweep Speed ....>50 MHz/sec (with 25-kHz resolution)

Power Requirements ....90 to 260 Vac, 47 to 440 Hz

Power Consumption (standard) ....< 80 W

Power Consumption (all options) ....< 90 W

Digital Audio Storage
Storage Time ....> 6 hours of Audio Storage
Storage Bandwidth ....3-kHz Audio

Inputs/Outputs
Antenna Input...SMA
AC Power Input...IEC
Phone Output ....1/8-in phone
Receiver 1 & 2 Audio Outputs ....9-pin D

See WJ-8607A, WJ-8654, and WJ-9168 data sheets for detailed RF specifications.

Environmental

Temperature
Operating Range ....0 to +40°C Case temperature
Non-operating Range (storage) ....0 to +70°C Case temperature
Humidity ....95% relative humidity, non-condensing

WJ-8932-1MD System Inputs/Outputs

- Antenna Input (SMA)
- AC Power input (IEC)
- Phone Output (1/8-in phone)
- Receiver 1 & 2 Audio Outputs (9-pin D)