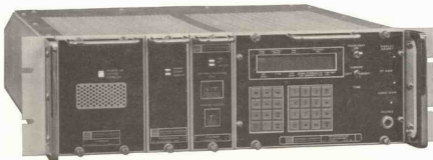


WJ-9040/SYS003-2 Broadband Receiving System



The WJ-9040 Broadband Receiving System consists of a collection of WJ-9040 modules which form a 200 Hz to 1400 MHz receiver containing 13 bandwidths and offering AM, AM Slideback, FM, CW, and SSB demodulation modes.

The subsystem is packaged in a single 5.25 inch by standard 19 inch equipment frame and is useful for any application requiring a small, low cost, broadband receiver. This includes communications intercept and monitoring, and RFI/EMI screening.

The system consists of a WJ-8628-4-5 half rack, 20 to 512 MHz Receiver/Controller which includes a slideback capability. The unit also contains an internal frequency extender option (WJ-8628-4/FE) to expand coverage to 1400 MHz. An external HF frequency extender option (WJ-8628-1/HFE223) is an eighth rack module mounted next to the receiver, which extends coverage down to 1.5 MHz. The two units together act as a single 1.5 MHz to 1400 MHz receiver with four bandwidths in the 5 kHz to 16 MHz range. In order to increase available bandwidths, a second eighth rack unit, the WJ-9040/IFD220, is mounted in the frame. This unit operates as an independent IF demodulator with up to four bandwidths in the 5 kHz to 16 MHz range. This then increases overall receiver capability from four bandwidths to eight.

A second receiver, the WJ-8625-1, covers the VLF portion of the spectrum and is mounted in the last quarter rack of frame space. The WJ-8628-4-5 controls this unit and its audio is routed to the WJ-8628-4-5 headphone jack automatically, whenever the unit is being controlled. The receiver tunes in 1 Hz steps from 200 Hz (tunable to 0 Hz) to 1.5 MHz and contains up to five bandwidths in the 100 Hz to 16 kHz range.

The four functional modules plug into an EFR100 Equipment Frame, which routes power, control and audio signals. The frame can be rack mounted, using standard slides (optional). At the rear of the frame are three additional modules. The EPS100 supplies power to the frame and all modules from either a 110 or 220 VAC source operating at 47 to 450 Hz. The SRM105A is a site lockable frequency reference which provides a 50 MHz reference to the receiver (and extender) synthesizers. The unit may be locked to a 1, 5, or 10 MHz external reference or can be used with its internal 50 MHz reference. The IOM108-1 is a digital I/O module, which routes audio and control signals to and from the receivers and demodulators. In addition, an IEEE-488 interface (optional) can be plugged into the unit to allow for system remote control. The unit has a common video output from a power combiner module mounted on the top of the IOM108-1.

TECHNICAL SPECIFICATIONS

WJ-8628-4-5:

Same as WJ-8628-4, except:

- Tuning Speed -- 5 msec Typical, 20 msec Maximum Except 0.5 Second At 14 Band Break Points
- AM/Slideback Detection Mode
- Headphone Jack Monitors Audio Signals of Receivers Controlled By the WJ-8628-4-5
- Front Panel Displays Bandwidth of Video Output Rather Than IF Bandwidth
- Scan Operation Nonoperative
- Video Output is 0.115 VRMS

WJ-8628-1/HFE223:

Frequency Range	1.5 to 20 MHz
Tuning Step Size	100 Hz
Noise Figure	14 dB maximum
3rd Order Intercept Point	-5 dBm minimum
IF Rejection	70 dB minimum
Image Rejection	70 dB minimum
LO Radiation	-87 dBm maximum
Maximum Usable Bandwidth	500 kHz
Size	5.2 inches high, 2.0 inches wide, 14 inches deep

WJ-9040/IFD220:

Input Frequency	21.4 MHz
IF Bandwidths	Any four, from 5 kHz to 16 MHz
Input Level	15 dB above WJ-8628-4 level
Detection Modes	AM, AM slideback, FM, pulse, CW
Gain Mode	Manual or automatic, 70 dB range
IF Output	-20 dBm at AGC threshold
Video Output	0.115 VRMS into 75 ohms
Audio Output	1.25 VRMS into 600 ohms
Power	8 watts
Size	5.2 inches high, 2.0 inches wide, 14.38 inches deep

WJ-8625-1:

Detection Modes	AM, FM, CW, and SSB
Input Frequency	200 Hz to 1.5 MHz
Tuning Step Size	1 Hz
Noise Figure	12 dB
3rd Order Intercept Point	+10 dBm
IF Rejection	65 dB
Image Rejection	80 dB
LO Radiation	-95 dBm

WJ-8625-1: (Continued)

IF Bandwidths	2.85 kHz or 3.2 kHz for SSB, plus any four of the following: 0.1, 0.2, 0.5, 1, 2, 3, 4, 6, 8, 12 or 16 kHz, USB, LSB
IF Output	20 mV RMS into 50 ohms at 3 microvolt input level

System Noise Figure Specifications

Antenna Inputs:

200 Hz to 1.5 MHz	12 dB
1.5 MHz to 20 MHz	14 dB
20 MHz to 105 MHz*	14.5 dB
20 MHz to 500 MHz**	13 dB
500 MHz to 1400 MHz	13 dB

* Upper frequency set by front panel thumbwheel switch.

** Lower frequency set by front panel thumbwheel switch.