

WJ-8922 TSCM RECEIVER

PRELIMINARY



DEVELOPMENTAL MODEL

FEATURES

- o 1 kHz to 3 GHz Frequency Range
- o AM, FM, and CW/SSB
- o Double Demodulation Capability

DESCRIPTION

The WJ-8922 TSCM Receiver is designed to cover the 1 kHz to 3 GHz frequency spectrum in either a manual tune/sector scan, or panoramic scan mode. Reception modes include AM, FM, and CW/SSB with the capability for Double Demodulation. The WJ-8922 is extremely portable and flexible. The unit fits in an attache case which is suitable for airline carry-on luggage.

December 1976

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Due to the synthesized frequency plan used in the receiver, manual band switching is not required and the panoramic mode permits 1 MHz to 3 GHz frequency sweeping without operator intervention. Double demodulation capability permits detection of FDM or other multiple modulation schemes. The 1 - 3000 MHz receiver control structure is totally digital which means the receiver may be controlled remotely by separating the receive portion from the control portion by cables up to 300 feet long. Or, if desired, the control can be via a low speed (voice grade) telephone modem.

Both Wide and Narrowband applications have been considered. Consequently, a 20 MHz Wide IF output centered at 160 MHz is available as well as a 5 MHz Wide IF centered at 21.4 MHz. Either may be used for predetection recording or processing. The IF Bandwidths selectable for detection are 10 kHz, 75 kHz, and 300 kHz for signals above 1 MHz tuned frequency and 1 kHz and 4 kHz for signals below 1 MHz tuned frequency.

The WJ-8922 comes with a standard 12 V battery pack which provides one half hour minimum operating time. a +12 V dc power input plug is provided for external battery operation. If desired, a small portable oscilloscope such as a Tektronix model 221 may be packaged in place of the battery pack to provide signal monitor capability. The WJ-8922 provides both horizontal and vertical drive outputs so that any oscilloscope with compatible frequency response may be used as the signal monitor.

SPECIFICATIONS

Frequency Range	1 kHz - 3000 MHz
Antenna Inputs	Two, 1 kHz-1 MHz and 1 MHz-3 GHz
Input Impedance	50 ohms
Noise Figure	8 dB, maximum
Tuning	The TSCM consists of two separate receivers. One tunes from 1 kHz to 1 MHz and the other from 1 MHz to 3 GHz. Above 1 MHz all injection oscillators are frequency synthesized. Below 1 MHz oscillators are free running. Resolution above 1 MHz is 1 kHz with continuous tuning below 1 MHz.
1 dB Compression Point	-20 dBm
Frequency Stability	± 1 part in 10^6 over 0° to 50° C from 1 MHz-3 GHz; less than 150 Hz/hour drift after 1 hour warmup. 1 kHz-1 MHz.
Image Rejection	70 dB, minimum