



May 1996

## Speech Enhancement Unit WJ-871Y/SEU

The WJ-871Y/SEU option provides both wideband noise reduction and automatic notch-filtering for improved reception of HF signals. The option is contained on an expansion board installed inside the receiver. The wideband noise reduction and automatic notch-filter can be enabled independently or used in conjunction with the tunable IF notch-filter already available in the WJ-871Y family of receivers.

### Background

Both wideband noise reduction and automatic notch-filtering are accomplished using adaptive filter technology. Adaptive filters analyze the correlation of the HF signal and change their shape in response. Correlation simply refers to the constancy of a signal. For example, a steady tone is highly correlated, while HF noise has almost no correlation. The filter uses this information to reject highly correlated (automatic notch) or uncorrelated (wideband noise) signals while still passing the speech or music in the HF signal.

### Control

The WJ-871Y/SEU capabilities are controlled remotely or via the receiver front panel. Enabling the wideband noise reduction and automatic notch-filter does not conflict with the tunable IF notch-filter of the WJ-871Y. Independent operation of the automatic notch filter and the wideband noise reduction allows tradeoffs for best adaptive filtering speed and resolution.

### Equipment Requirements

The WJ-871Y/SEU speech capabilities are available in all units of the WJ-871Y receiver family. Consult the factory for details on upgrading field units. Note that the WJ-871Y/SEU only affects the receiver audio. All other inputs and outputs are left unchanged to eliminate system integration issues.

### Mechanical Description

The WJ-871Y/SEU Option consists primarily of a daughterboard that mounts to the Digital Control Assembly. This requires no additional cabling. It is compatible with all WJ-871Y options except for the WJ-8711/488, WJ-871Y/IFC125, WJ-871Y/DS01 and WJ-871Y/PCSM.

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