

# HIGH FREQUENCY BROADCAST TRANSMITTERS

HARRIS  
INTERTYPE  
CORPORATION

**GATES<sup>®</sup>**  
A DIVISION OF HARRIS-INTERTYPE

# 100 kW Short Wave Broadcast Transmitter



## MODEL SW-100

Gates SW-100 provides overall performance superior to that of any other short wave broadcast transmitter in the same power range—and at significantly lower operating costs. This is made possible by Gates' exclusive high level Pulse Duration Modulator (U.S. Patent No. 3440566).

**HIGH EFFICIENCY—EXCEEDS 60%:** The Pulse Duration Modulator employed in the transmitter is almost 90% efficient (instead of the usual 50% or 60%), allowing an unusually high overall efficiency of more than 60%. This means about one-third less power consumption than that of other high level plate modulated 100 kilowatt transmitters.

**ONLY FIVE TUBES:** The transmitter employs just five tubes—with a modern ceramic 4CV50,000E power tetrode in the modulator and final RF power amplifier sockets. All power supplies utilize long-life solid-state silicon rectifiers. Highest quality components, conservatively rated, are used throughout the SW-100 to assure greatest reliability.

**CONTINUOUS 100% MODULATION RATING:** The high efficiency series type Pulse Duration Modulator permits continuous 100% sine wave or trapezoidal modulation. Another feature of this high efficiency series type modulator is convenient front panel carrier adjustment over a wide range.

**PRE-SET TUNING:** After the SW-100 has been tuned to the desired frequency manually, the exact position of each variable tuning element is stored in a simple "memory". Up to ten different frequencies from 3.2 to 26.5 MHz can be "remembered", which allows pushbutton re-tuning to any pre-set frequency without further manual tuning. Few controls and ample metering make this the easiest tuning 100 kW transmitter available.

**QUIET VAPOR PHASE COOLING:** Vapor phase cooling reduces noise by eliminating the need for large blowers moving high velocity air. One two-horsepower fan cools the heat exchanger and flushes the transmitter cabinets, resulting in whisper-quiet operation. Vapor phase cooling also extends tube life by helping to eliminate "hot spots" and maintaining anode temperatures far below those attained by other methods.

Ideal for use in all types of climate, this transmitter greatly reduces the problems of cleaning and filtering of outside air. With vapor phase cooling, ducting outside air into the transmitter is not necessary. Also, the cooling system requires little attention other than maintaining the proper purity and water level in the reservoir tank.

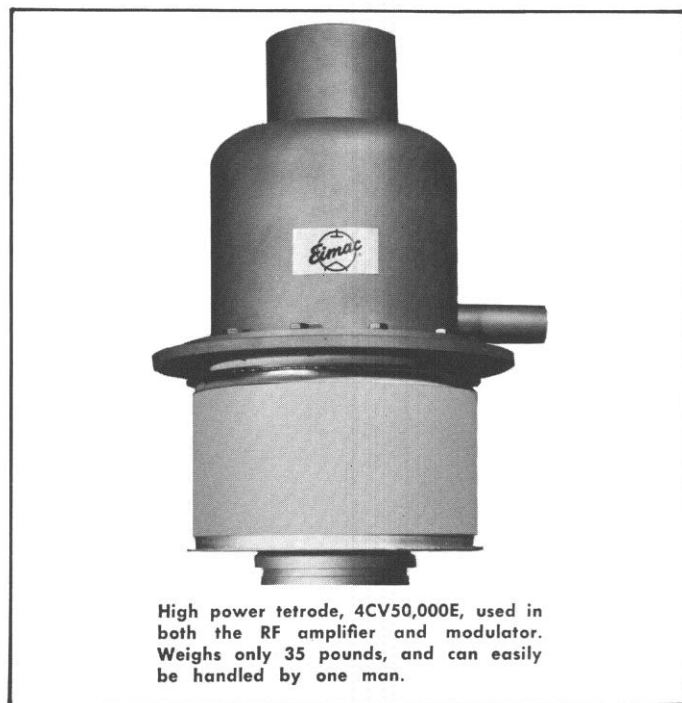
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**GREATLY REDUCED FLOOR SPACE:** Due to the high efficiency of the transmitter and the elimination of large iron core components (no modulation transformer and reactor), the SW-100 requires only 7.0 square meters (76 square feet) of floor space. Careful cabinet design provides easy accessibility to all components.

**TRANSMITTER LAYOUT:** The standard layout of the transmitter consists of two cabinets, a heat exchanger designed for mounting on top of the cabinets, and an external high voltage power transformer. Front and rear doors, and meter panel are magnetically latched. External connections to the transmitter are made through the top so that floor ducts are not necessary.

**SW-50:** The SW-50 is the 50 kW version of the SW-100, and includes all of the features mentioned previously. These features include: the Pulse Duration Modulator, which allows an unusually high overall efficiency of more than 60%; five tube design—only five tubes in the entire transmitter for highest reliability; continuous 100% modulation rating; quiet Vapor Phase cooling; pre-set tuning; and reduced floor space, due to the elimination of large iron core components.

The SW-50 layout is identical to that of the SW-100 (two cabinets, heat exchanger and external high voltage power transformer).



SW-100, front doors removed.