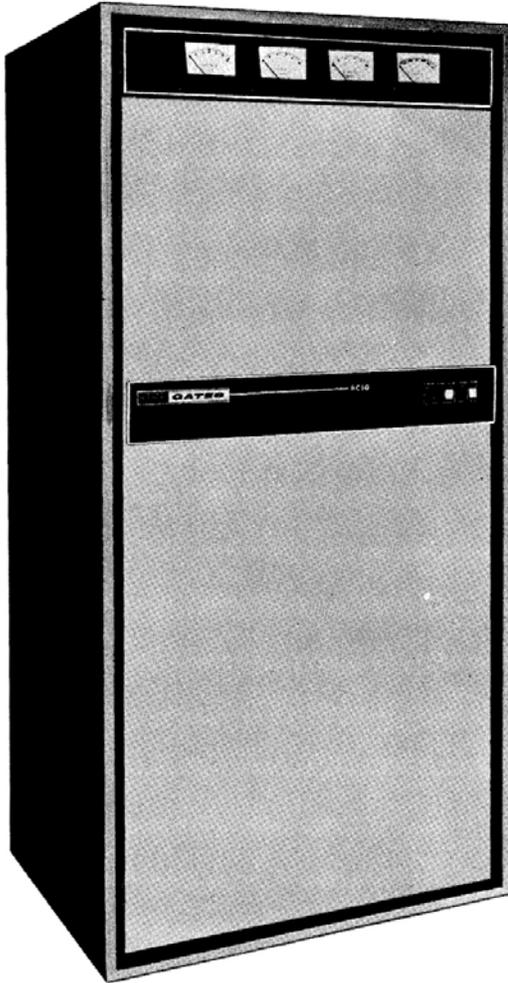


1000/250 Watt AM Broadcast Transmitter



MODEL BC-1G

The "Big G" offers you all of the really important features you look for in a 1 kW AM transmitter . . . such as wide frequency response, great reliability and low operating costs. Another big feature is the high fidelity sound, achieved through low distortion—sound with an unusually rich quality that has become a "Big G" trade-mark.



AUDIO SECTION: Wider frequency response, low harmonic distortion, and low noise . . . the basis of the "Big G's" fine sound . . . result from a unique circuit arrangement. A new low leakage modulation transformer, combined with superb high frequency response has produced typical distortion readings of 1.5% or less at the critical 7000 Hz audio frequency. Push-pull 807 tubes modulate the husky 833A high level modulator tubes, producing an abundance of extra power to provide full performance as tubes age.

RF SECTION: Dual vacuum-type ovenless crystal units provide utmost stability. Frequency adjustment and crystal changeover are made from the front, as are all transmitter control functions. There are four RF stages to assure good frequency stability. Dual long-life 833A tubes feed a generous 1000 watts into a Tee network for exact loading and superior harmonic attenuation. The final amplifier and Tee network are tuned by large, variable edgewound coils.

BUILT-IN DUMMY ANTENNA: The BC-1G may be tested at a full 1 kilowatt output with 100% modulation, using this built-in antenna feature.

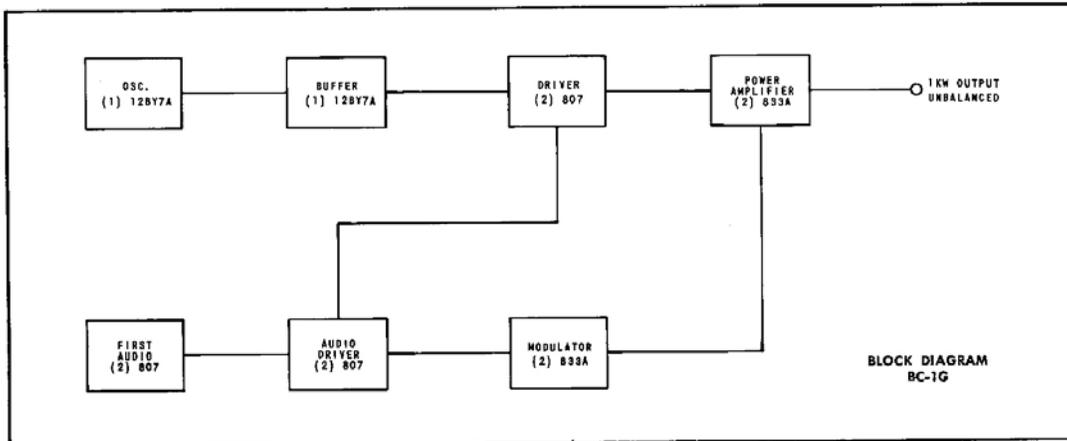
POWER REDUCTION: Class IV stations will particularly appreciate the quick and efficient way the BC-1G reduces power to 250 watts. Switching in the primary of the main plate transformer eliminates power consuming, voltage dropping resistors. Plate voltage is reduced on both the power amplifier and modulator tubes, resulting in the possibility of hundreds of added tube hours, as well as savings in power costs.

POWER AMPLIFIER TUBES: In search of the most reliable power tube, based both on performance and cost per hour, Gates engineers tested every known tube type available for this service. The result was the selection of the 833A tube for both RF and modulator circuits. The 833A provides a combined hourly tube cost of approximately 2¢, and has worldwide availability. Being a solid, husky triode, it is more tolerant to spurious emissions, and changing operating conditions caused by variances in load or fluctuations in cooling.

REMOTE CONTROL: Built-in metering kits are provided for both plate voltage and plate current. The use of relays throughout permits almost instantaneous adaption to remote control, and eliminates the need for outboard attachments. All electrical connections for remote controlling are brought out to terminal boards.

RECTIFIER SYSTEM: The BC-1G solid state model has three separate power supplies, all with large silicon rectifiers for lower power consumption, lifetime reliability. The three are: (1) main HV supply, (2) intermediate supply, and (3) bias supply.

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COOLING: The "Big G" was designed from the outset with ideal cooling as a major engineering objective. In the transmitter, parts location is of great importance, and is combined with an intelligent convection cooling system and suction fan ventilation in the top of the cabinet. Fresh air is drawn through dual removable filters at the back base of the transmitter, circulated through every part of the equipment, and then exhausted at the top. Heat generating power tubes are located in the direct air stream. Component and tube life are greatly lengthened by the cool-running operation.

GENERAL DESIGN: The transmitter is completely self-contained in a sturdy steel cabinet. An attractive front door is hinged on the left and opens to expose all tuning controls. Color-coded switches for start-stop and power change functions are accessible from the front when the door is closed. These switches illuminate to show the transmitter operating status at a glance. Behind the front door is a full-length perforated grill for protection when the transmitter is operating . . . it may be removed in seconds by means of snap locks. The back panel is easily removed by turning two thumb screws.

SPECIFICATIONS

POWER OUTPUT: 1000/250 watts. Capable output to accommodate phasor loss, etc., 1100 watts. Also available in a 1000/500 watt model.

RF FREQUENCY RANGE: 540-2000 kHz (as ordered).

RF OUTPUT IMPEDANCE: 50/70 ohms. Other output impedances available on special order.

FREQUENCY STABILITY: ± 5 Hz or better.

CARRIER SHIFT: 3% or less with adequate power mains. Typical is 2%.

MODULATION: High level Class B.

AUDIO RESPONSE: $\pm 1\frac{1}{2}$ dB 30-12,000 Hz 95% modulation. Under practical programming conditions $\pm 1\frac{1}{2}$ dB 30-16,000 Hz.

AUDIO DISTORTION: 3% or less 50-10,000 Hz 90% modulation. Under practical programming conditions 2% or less 50-16,000 Hz.

NOISE: (1000 watts) 60 dB or better below 100% modulation. (250 watts) 55 dB or better below 100% modulation.

AUDIO INPUT IMPEDANCE: 150 or 600 ohms at ± 16 dBm ± 2 dB.

POWER CONSUMPTION: 1 kW; 0 modulation, 2650 watts; program modulation, 3150 watts; 100% modulation, 3850 watts. 250 watts; 0 modulation, 1650 watts; programming modulation, 1825 watts; 100% modulation, 2050 watts.

POWER INPUT: 230 volt, 1 phase, 3 wire, 50/60 Hz. (208 volts also available when specified).

DUMMY ANTENNA: 50 ohms. Capable 100% program modulation continuous or 100% sine wave modulation for 20 minutes on and 5 minutes off.

TEMPERATURE: -20° to $+50^{\circ}$ C (silicon). $+5^{\circ}$ to $+50^{\circ}$ C (mercury rectifier).

SIZE: 78" high, 37" wide, 29" deep. Front door swing 32".

WEIGHT: Net, 1000 lbs. Domestic packed, 1140 lbs. Export packed, 1490 lbs. Cubage: 110.

TUBES: (2) 12BY7A crystal oscillator and buffer, (2) 807 intermediate driver amplifiers, (2) 833A RF power amplifiers, (2) 807 1st audio amplifiers, (2) 807 2nd audio amplifiers, (2) 833A modulators. If tube rectifier model purchased, add: (2) 8008 HV rectifiers, (2) 866/866A intermediate voltage rectifiers.

ORDERING INFORMATION

BC-1G transmitter, 1000/250 watts, solid state rectifier model, with tubes, and 1 vacuum crystal.....994-6245

BC-1G transmitter, 1000/250 watts, tube rectifier model, with tubes and 1 vacuum crystal.....994-6245B

Spare 100% tube complement for 994-6245 model.....990-0471

Spare 100% tube complement for 994-6245B model.....990-0472

Output power remote control kit.....994-6326

NOTES: (1) Be sure to specify carrier frequency when ordering. (2) Available for 208 volts, 3 wire, at slight additional cost. (3) Packed weight of 994-6245B tube rectifier model is 25 lbs. greater. (4) Power consumption of the BC-1G with tube rectifiers is slightly higher due to addition of filament transformers.