

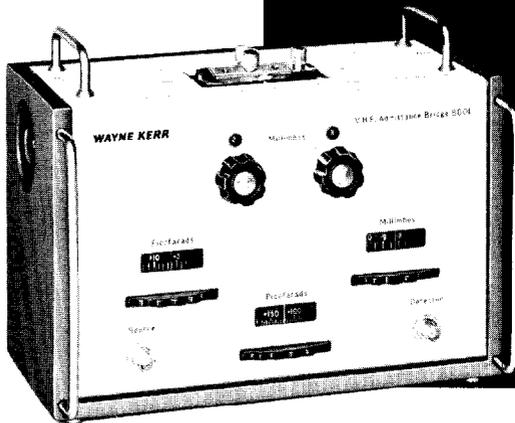


# Wayne Kerr CORPORATION

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Innovations in Instrumentation ■ Measurement ■ Analysis ■ Synthesis ■ Control

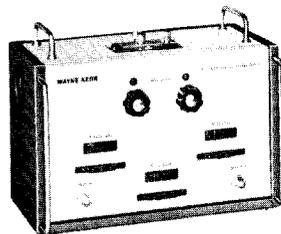
## B801B VHF Admittance Bridge



- Balanced Measurements, from 1 to 100 megacycles
- Extremely Wide Impedance Range
- Accuracy:  $\pm 2\%$
- 2-terminal and 3-terminal measurements, balanced or unbalanced

The VHF Admittance Bridge B801B is an instrument of high inherent precision and reliability, employing the transformer ratio-arm principle, and specifically designed for the performance of extremely accurate measurements on antennas, cables, and transmission lines, as well as input impedances of amplifiers and receivers over the frequency range from 1 to 100 megacycles. It can also be used for checking transistor parameters, VSWR, and a wide variety of component measurements, including shunt capacitance of coils.

This compact instrument is simple to operate: thumb-wheel-actuated dials permit rapid bridge balance and direct readout of admittance in terms of conductance and positive or negative capacitance. Two-terminal balanced or unbalanced measurements and three-terminal measurements are easily performed. Weighing only 9 pounds, the B801B is readily portable to remote locations such as field antenna sites, cable runs, and transmission lines.



SR268

The transformer ratio-arm principle avoids the difficulties and inconvenience in the use of bulky external standards and their accessory equipment; a single compact set of internal standards provides all measurements.

Photo shows the B801B in conjunction with the Wayne Kerr Model SR268 Combined Source and Detector. The SR268, with its single dial tuned system, provides ganged tuning of source and detector from 100kHz — 100 MHz simultaneously in one operation. In addition, the SR268 can be battery-operated for field use.

A set of external conductance and susceptance standards, Type Q761, is available for checking the performance of the bridge against frequency. The conductance standards are in the form of high-stability resistors fitted in special holder for attachment to the bridge; the susceptance standards are in the form of capacitor blocks; these components are so constructed that their values remain constant for all frequencies between 1 and 100 megacycles.

The B801B can be connected directly to balanced transmission lines for measurements — no baluns or similar devices are needed. The tedious calculations required when using any other bridge, with its grounded terminals, are eliminated.

An important application is making standing wave measurements. The maximum conductance of 100 millimhos enables the locus of all practical mismatch conditions in cable connectors in the 50, 60, 75 and 100 ohms range to be plotted. Measurements of cable parameters, including resistance, capacitance or inductance per unit length, as well as propagation constants, are readily undertaken.

The bridge can be used for the calibration of VHF precision capacitors; the provision of neutral is most advantageous as it permits a connection to be made to the guard of the capacitor. There is a further advantage where measurement of small components is concerned: the shunt capacitance of such items as VHF coils cannot be detected at frequencies below the range over which the B801B operates.

In conjunction with the Q801 Adaptor, the B801B provides a most convenient means for performing both grounded-base and grounded-emitter measurements of all common small-signal AC transistor parameters, from 1 MC to 100 MC. The Adaptor consists of the Transistor Adaptor Q801A, and the CU681 DC Control Unit that establishes appropriate DC operating levels without risk of transistor damage. Provision is made for measuring tunnel diodes over the same frequency range.

## SPECIFICATIONS

**Frequency Range:** 1 to 100 megacycles.

**Conductance:** Range: 0 to 100 millimhos.

Accuracy:  $\pm 2\% \pm 0.1$  millimho.

Discrimination: 0.02 mmho to 50 MC; 0.1 mmho at 100 MC.

**Capacitance:** Range: 0 to + 230 picofarads; 0 to - 230 picofarads.

Accuracy:  $\pm 2\% \pm 1.5$  pF, to 100 MC.

Discrimination: 0.2 pF.

**Dimensions:** Width: 11 inches (28 cm).

Height: 9 inches (23 cm).

Depth: 7½ inches (19 cm).

**Weight:** 9 pounds (4.1 kilograms).

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