

calibrate the multiplier, remove jumper J1 (X input) and J2 (Y input), and use the following procedures:

- 1) **X-input offset adjustment:** Connect a 1.0kHz, $5V_{P-P}$ sinewave to the Y input, and connect the X input to ground. Using an oscilloscope to monitor the output, adjust R_X for an AC null (zero amplitude) in the sinewave.
- 2) **Y-input offset adjustment:** Connect a 1.0kHz, $5V_{P-P}$ sinewave to the X input, and connect the Y input to ground. Using an oscilloscope to monitor the output, adjust R_Y for AC null (zero amplitude) in the sinewave.
- 3) **Output offset adjustment:** Connect both X and Y inputs to ground. Adjust R_{OUT} until the output DC voltage is zero.
- 4) **Scale factor (Gain):** Connect both X and Y inputs to 10VDC. Adjust R_{SCALE} until the output voltage is 10VDC.
- 5) Repeat steps 1 through 4 as necessary.

A similar idea appeared in EDN.

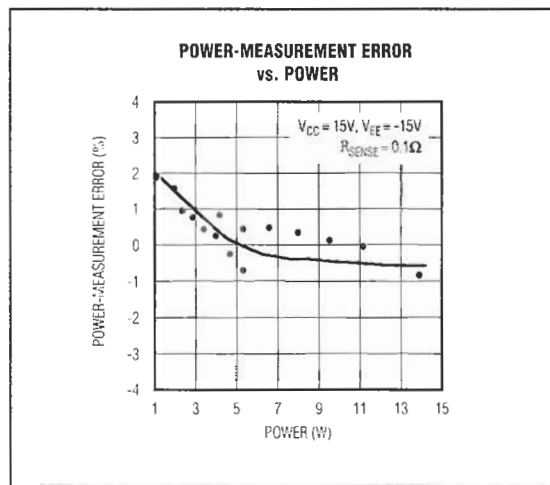


Figure 2. This graph shows measured power has better than $\pm 1\%$ accuracy for power levels between 3W and 14W.