



August 2, 2002

## DC489A DEMO BOARD QUICK START GUIDE

### INTRODUCTION

The DC489A demo board is used to evaluate the LTC5507 RF power detector with integrated output buffer and voltage reference. The LTC5507 converts an RF input signal at pin 6 (RF) to a DC voltage at pin 3 (Vout). The RF input frequency range is 100 KHz to 1000 MHz. The maximum input power is 16 dBm. The DC output voltage at Vout with no RF signal present at the input is typically 260mV. When the RF signal is applied, the DC output voltage increases proportionately.

The optional 68 $\Omega$  (R1) termination resistor is not placed on the PCB. Capacitors C1 and C4 are 0.1  $\mu$ F for low frequency tests and evaluation (100 KHz to 1 MHz). For higher frequencies, C1 and C4 should be .01  $\mu$ F or less. For frequencies around 800 to 1000 MHz, a 39 pF value is suggested.

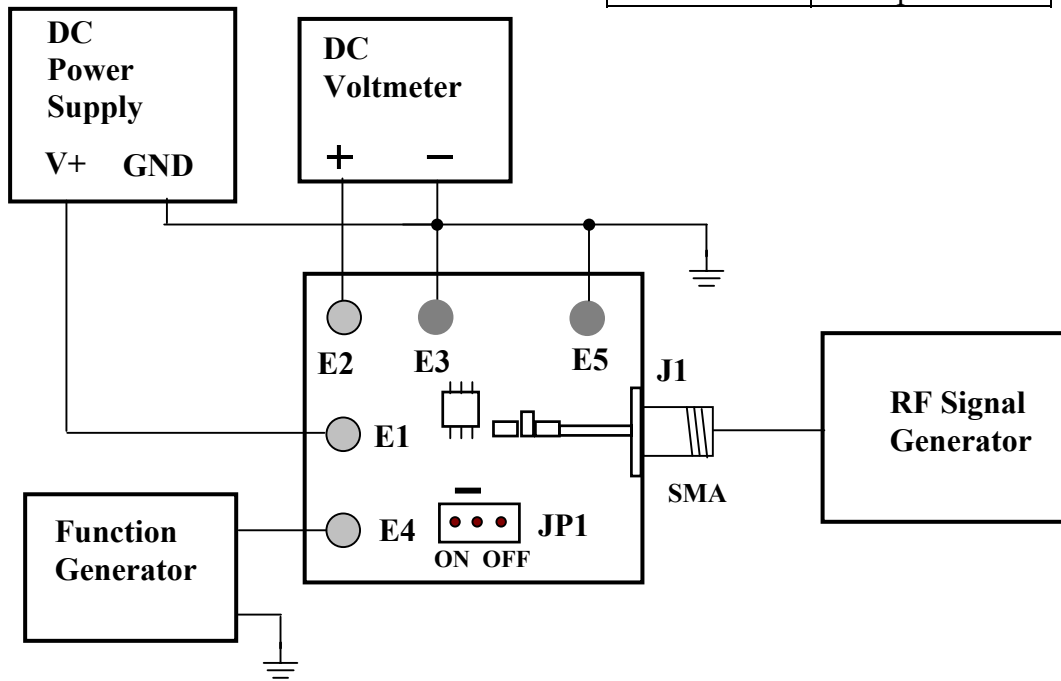
A logic HIGH at pin 1 of jumper JP1 enables the part. The jumper inserted in the left position provides logic HIGH (IC enabled). The jumper inserted in the right position provides logic LOW (IC disabled).

The DC489A demo board is easily set up for evaluating the LTC5507 RF power detector performance. Follow the procedures outlined below and make the connections on the attached diagram for proper operation.

1. Connect a positive DC power supply (2.7V to 6V) to E1. Connect the power supply ground to E3 or E5. Connect J1 to the RF signal generator via coaxial cable with an SMA connector. It is common practice to include a 3dB pad to minimize reflections back into the signal generator.
2. The part can be shutdown via switch JP1. When JP1 is connected to ground, the part will be in shutdown. When JP1 is connected to VCC via the 22k resistor the part will be enabled. A pulse generator can also control the shutdown terminal, E4, in order to characterize turn-on delay after shutdown. To do this, set JP1 to the enable position. Connect a 50 $\Omega$  termination from E4 to ground. Connect a pulse generator to E4 via a coaxial cable.
3. With JP1 set to the enable position, apply an RF input signal and measure the DC output voltage at E2.

Demo board external connections

E1	Vcc, positive
E2	Detector Vout
E3	Ground
E4	SHDN
E5	Ground
J1	RF input



**DC489A Demo Board Connection Diagram**