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## DC539A DEMO BOARD QUICK START GUIDE

### INTRODUCTION

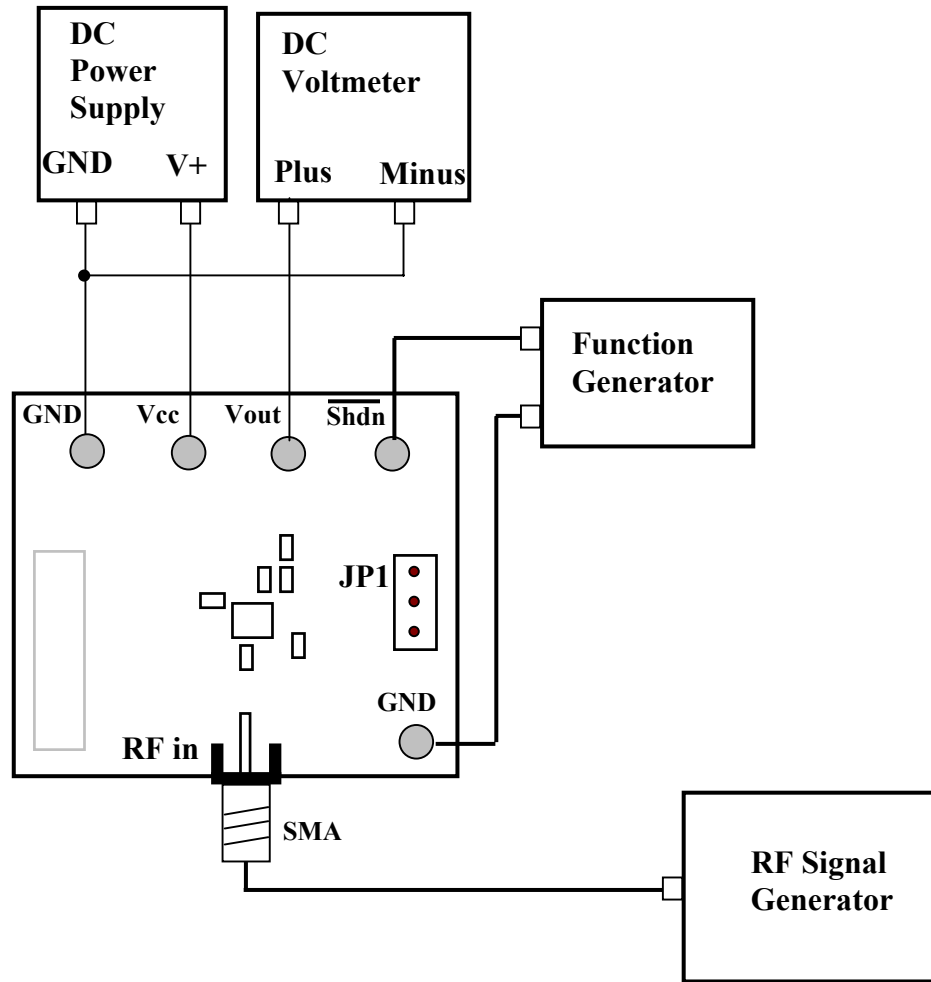
The DC539A demo board is used to evaluate the LTC5508, RF power detector with integrated output buffer and voltage reference. The LTC5508 converts an RF input signal at pin 6 (RF) to a DC voltage at pin 3 (Vout). The RF input frequency range is 300 MHz to 6000 MHz. Maximum input power is 12 dBm. The output voltage at Vout will start at an initial DC value of typically 250mV. When the RF signal is applied the output voltage will increase.

The optional 68 $\Omega$  (R1) termination resistor is not placed on PCB. The optional C5 shunt capacitor is not installed. R2 and C5 forming a low pass filter at Vout. Capacitor C1 is 18 pF for high frequency tests and evaluations, 3000 to 7000 MHz. For frequencies at 300 to 3000 MHz a 51 pF value is suggested.

A logic high at pin 1 enables the part. It is controlled by a jumper JP1.

The DC539A demo board is easily set up for evaluating the LTC5508 RF power detector performance. Follow the procedures outlined below and connections on the attached diagram for proper operation.

1. Connect the input 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 jumper 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. The shutdown terminal E4 can also be controlled externally by a pulse, or function generator, to characterize enable times from the shutdown state. 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 Vout DC voltage at E2.



**DC539A Demo Board Connection Diagram**