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DC391A DEMO BOARD QUICK START GUIDE

INTRODUCTION

The DC391A demo board is set up to evaluate the LTC5505-1 and LTC5505-2 RF power detectors performance. Demo board DC391A-A contains LTC5505-1 IC, and DC391A-B contains LTC5505-2 IC. LTC5505-1 and LTC5505-2 are RF power detector ICs with integrated output buffer and voltage reference. The LTC5505 converts an RF input signal at pin 1(RF) to a DC voltage at pin 4(Vout). The RF input frequency range is 300MHz to 2700MHz. Maximum input power is 18dBm. The output voltage at Vout will start at an initial DC value of typically 260mV +/- 90 mV. When the RF signal is applied, the output voltage will increase.

Additional solder pads have been added for evaluation of input tuning techniques. R1 and C5 are not included on the board and are not required for typical applications. R2 is included on the board but again is not required for typical applications. C1 is used for DC isolation of the LTC5505 RF input pin 1. In typical applications a logic HIGH on the SHDN pin 3 enables the part.

Follow the procedures outlined below with connections as shown 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. Connect J1 to the RF signal generator via an SMA cable. 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 SW1. When SW1 is connected to ground, the part will be in shutdown. When SW1 is connected to VCC via the 22k resistor, the part will be enabled. The shutdown terminal E4 can also be controlled by a pulse generator to characterize enable times from the shutdown state. To do this, set SW1 to the enable position and connect a 50 Ω termination from E4 to ground. Connect a pulse generator to E4 via a coaxial cable.
3. With SW1 set to the enable position, apply an RF input signal and measure the DC voltage at E2.

DC391A Connection Diagram

