June 17, 2003

DC656A DEMO BOARD QUICK START GUIDE

INTRODUCTION

The DC656A demo board is used to evaluate the LTC5532ES6, RF power detector with integrated output buffer and voltage reference. The LTC5532 has provisions for offset and gain adjustments. The LTC5532ES6 converts an RF input signal at pin 6 (RF) to a DC voltage at pin 2 (Vout). The RF input frequency range is 300 MHz to 7000 MHz. Maximum input power is 8 dBm. The output voltage at Vout will start at an initial DC value of typically 120 mV +/- 10 mV. When the RF signal is applied, the output voltage will increase.
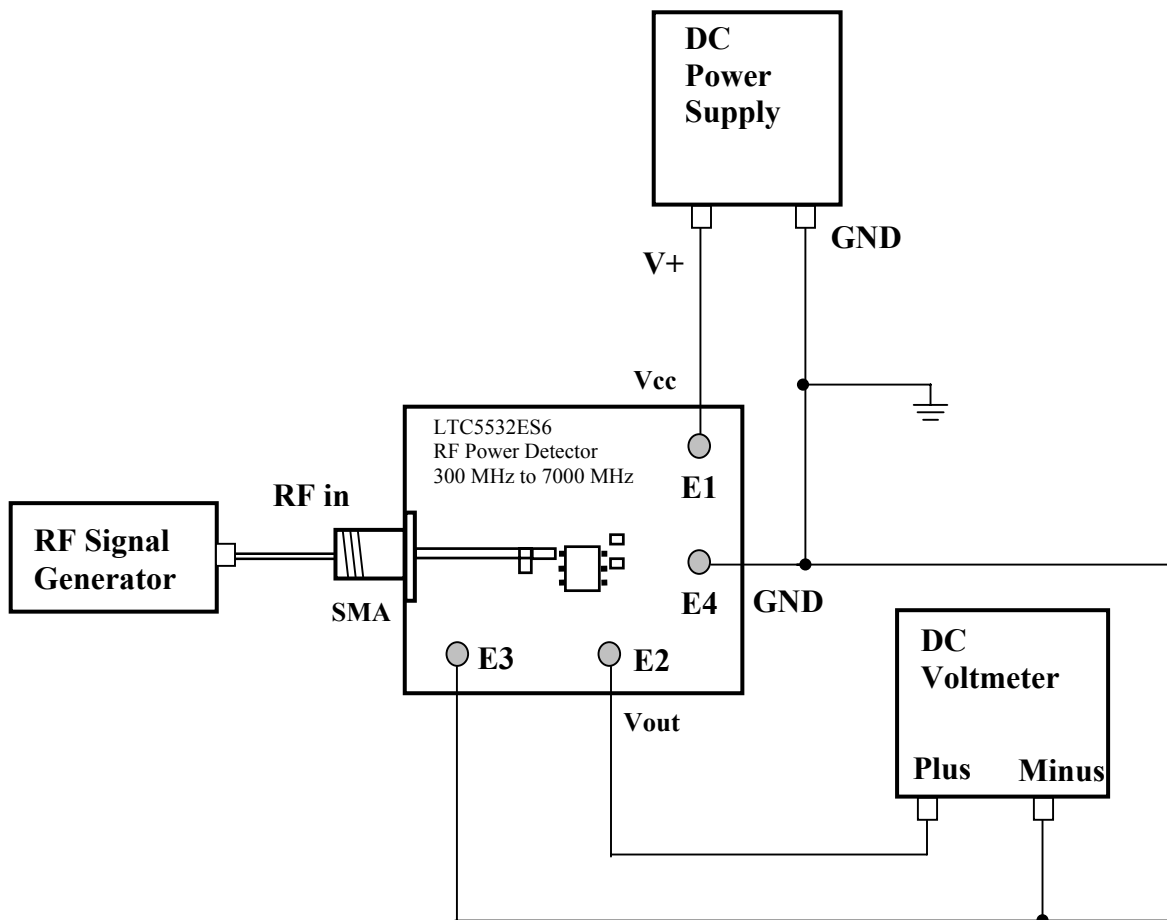
The optional R1 termination resistor and C3 output shunt capacitor are not placed on PCB. R2 and R3 are 10 kohm resistors. This reflects the gain setting = 2. E3 is an offset adjustment pin. It should be connected to ground for initial tests and measurements.

The DC656A demo board is easily set up for evaluating the LTC5532ES6 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. Connect J1 to the RF signal generator via coaxial cable with an SMA connector. It is common practice to include a 2dB or 3dB pad to minimize reflections back into the signal generator.
2. Connect E3 (offset adjustment pin) to ground.
3. Apply an RF input signal and measure the Vout DC voltage at E2.

Optional measurements can be done by changing the R2 resistor from 10 kohm to higher value to increase the gain of the part, if desired.

Additionally the offset voltage can be set to any voltage above 120 mV and the output (Vout) will track.

DC656A Demo Board Connection Diagram

The diagram includes the following labels:

DC
Power
Supply

V+   GND

Vcc

LTC5532ES6
RF Power Detector
300 MHz to 7000 MHz

E1

E4   GND

RF in

RF Signal
Generator

SMA

E3   E2

Vout

DC
Voltmeter

Plus   Minus

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