DESCRIPTION

Demonstration circuit 758 is used to evaluate the LTC®5535ES6, RF power detector with integrated output buffer and voltage reference. The LTC5535ES6 has provisions for enable and gain adjustments. The LTC5535ES6 converts an RF input signal at pin 1 (RFin) to a DC voltage at pin 5 (Vout). The RF input frequency range is 300 MHz to 7000 MHz. Maximum input power is 10 dBm. The output voltage at Vout will start at an initial DC value of typically 200 mV +/- 20 mV. When the RF signal is applied, the output voltage will increase.

The optional R1 termination resistor and R3 output shunt resistor are not placed on the PCB. R2 and R4 are 500 ohm resistors. This corresponds to the gain setting = 2. Voss pin E3 should be connected to ground for initial tests and measurements.

Design files for this circuit board are available. Call the LTC factory.

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QUICK START PROCEDURE

Demonstration circuit 758 is easily set up for evaluating the LTC5535ES6 RF power detector performance. Follow the procedures outlined below and connections on the attached diagram for proper operation.

1. Connect the DC power supply (2.7V to 6V) to E1. Connect the power supply ground to E4 or E5. 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. Apply an RF input signal and measure the Vout DC voltage at E2.
3. Connect E3 (Vos pin) to ground.

Optional measurements can be done by changing the R2 resistor from 500 ohm to a higher value to increase the gain of the part, if desired.

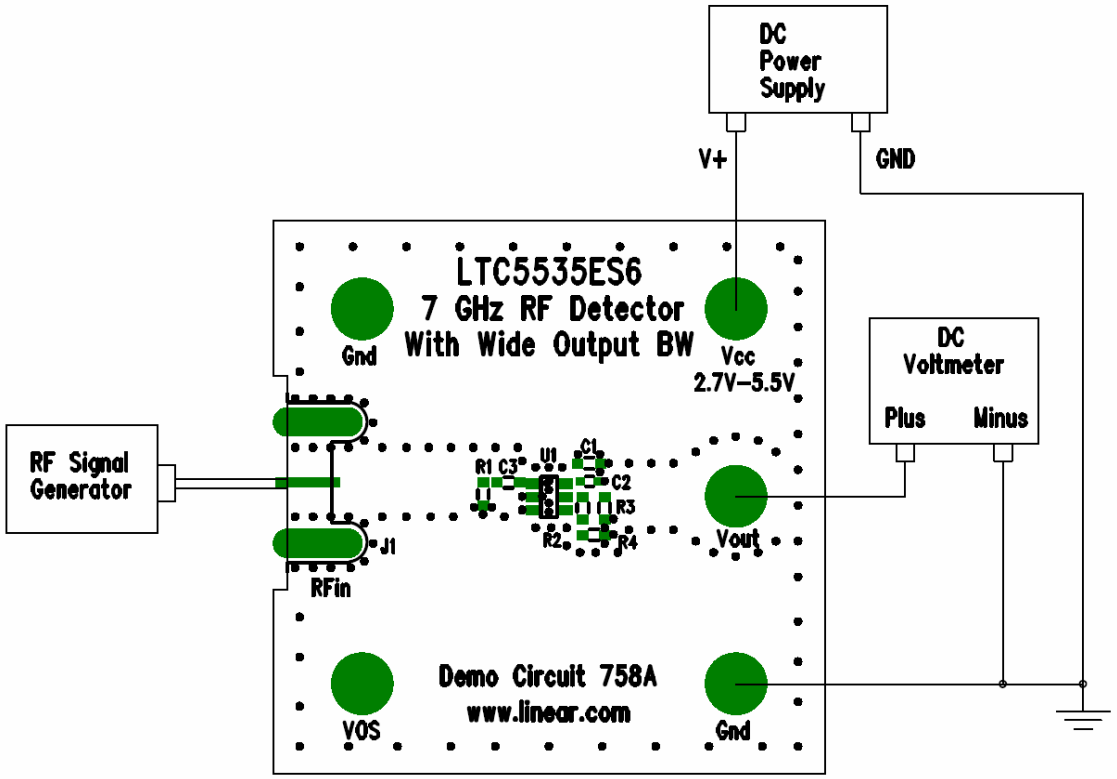
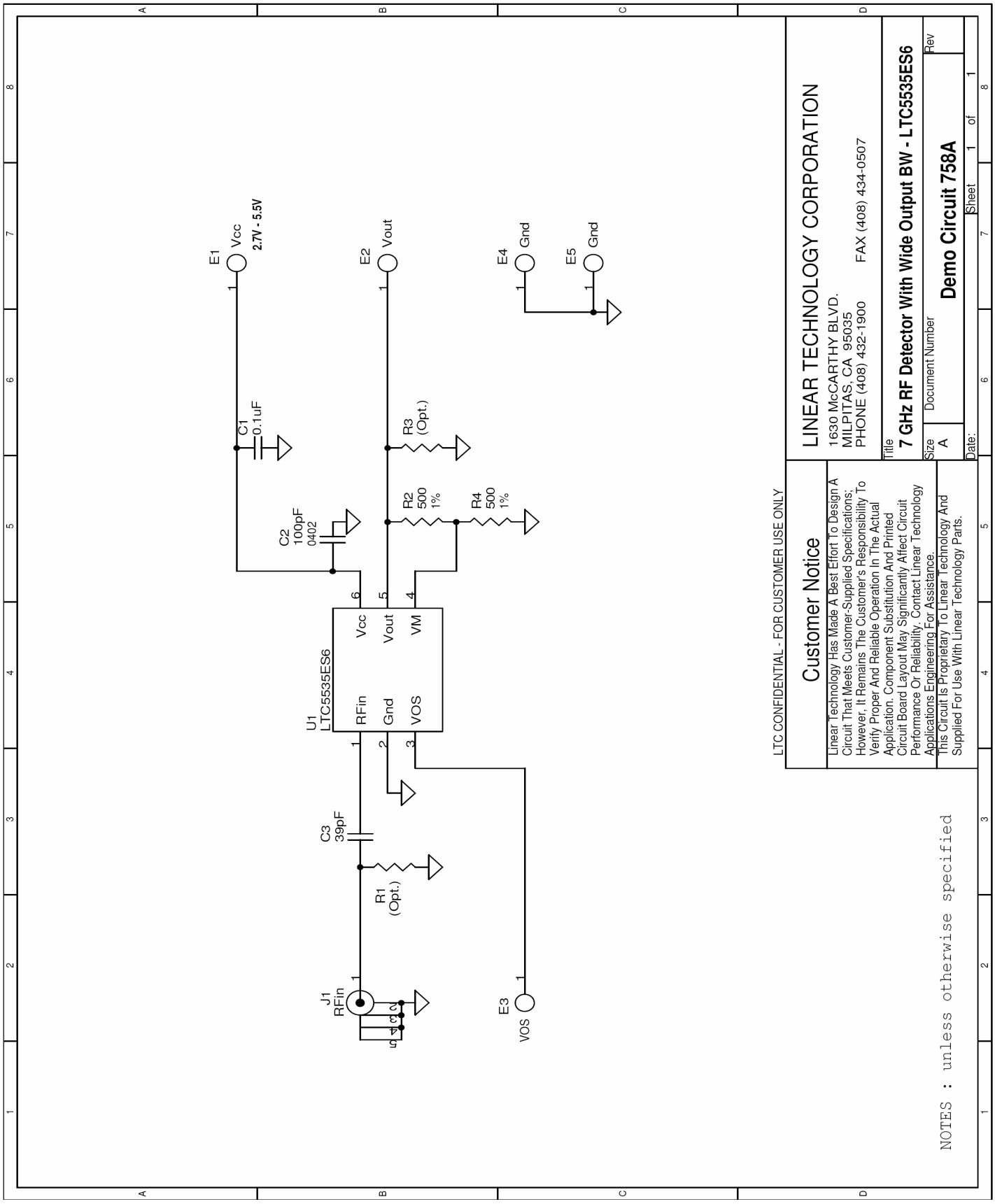


Figure 1. Proper Measurement Equipment Setup


E1
Vcc
2.7V - 5.5V
E2
Vout
E4
Gnd
E5
Gnd
C1
0.1uF
C2
100pF
0402
R3
(Opt.)
R2
500
1%
R4
500
1%
U1
LTC5535ES6
RFin
Gnd
VOS
Vcc
Vout
VM
C3
39pF
R1
(Opt.)
J1
RFin
E3
VOS
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This Circuit Is Proprietary To Linear Technology And Supplied For Use With Linear Technology Parts.
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Title
7 GHz RF Detector With Wide Output BW - LTC5535ES6
Size
A
Document Number
Demo Circuit 758A
Rev
Date:
Sheet 1 of 1
NOTES : unless otherwise specified