

DESCRIPTION

Demonstration circuit 715 is used to evaluate the LTC®5530ES6, RF power detector with integrated output buffer and voltage reference. The LTC5530ES6 has provisions for enable and gain adjustments. The LTC5530ES6 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 120 mV +/- 35 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 the PCB. R3 and R4 are 10k ohm resistors. This corresponds to the gain setting = 2. The demo circuit has R2, a 22K pull-up resistor, which provides a logic HIGH for the Enable pin (IC Enabled). Enable pin E3 should be left unconnected 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 715 is easily set up for evaluating the LTC5530ES6 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 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 (Enable pin) to ground. The IC is in shutdown mode.

Optional measurements can be done by changing the R3 resistor from 10k ohm to a higher value to increase the gain of the part, if desired.

QUICK START GUIDE FOR DEMONSTRATION CIRCUIT 715

RF POWER DETECTOR 300 MHz TO 7000MHz

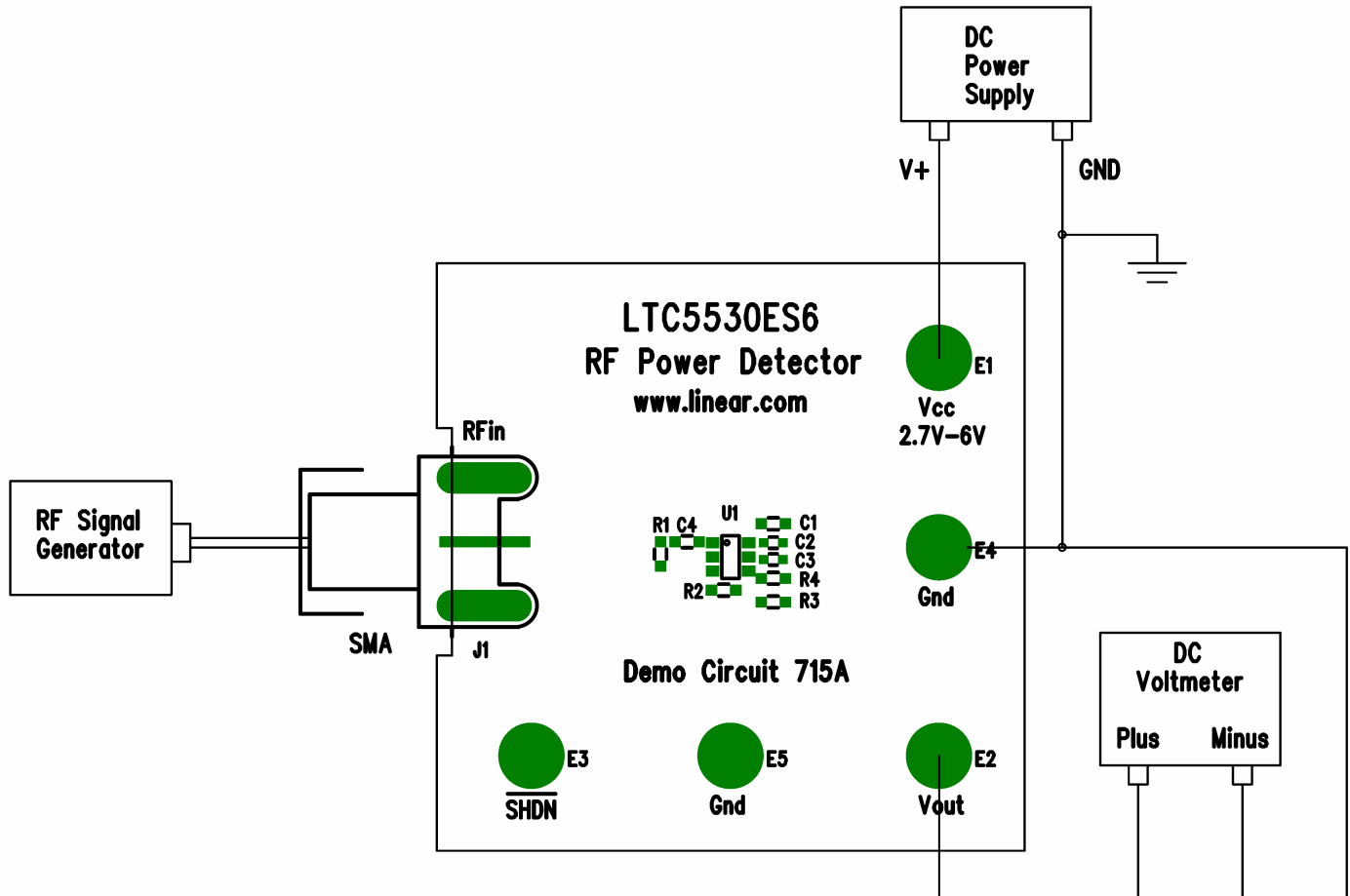
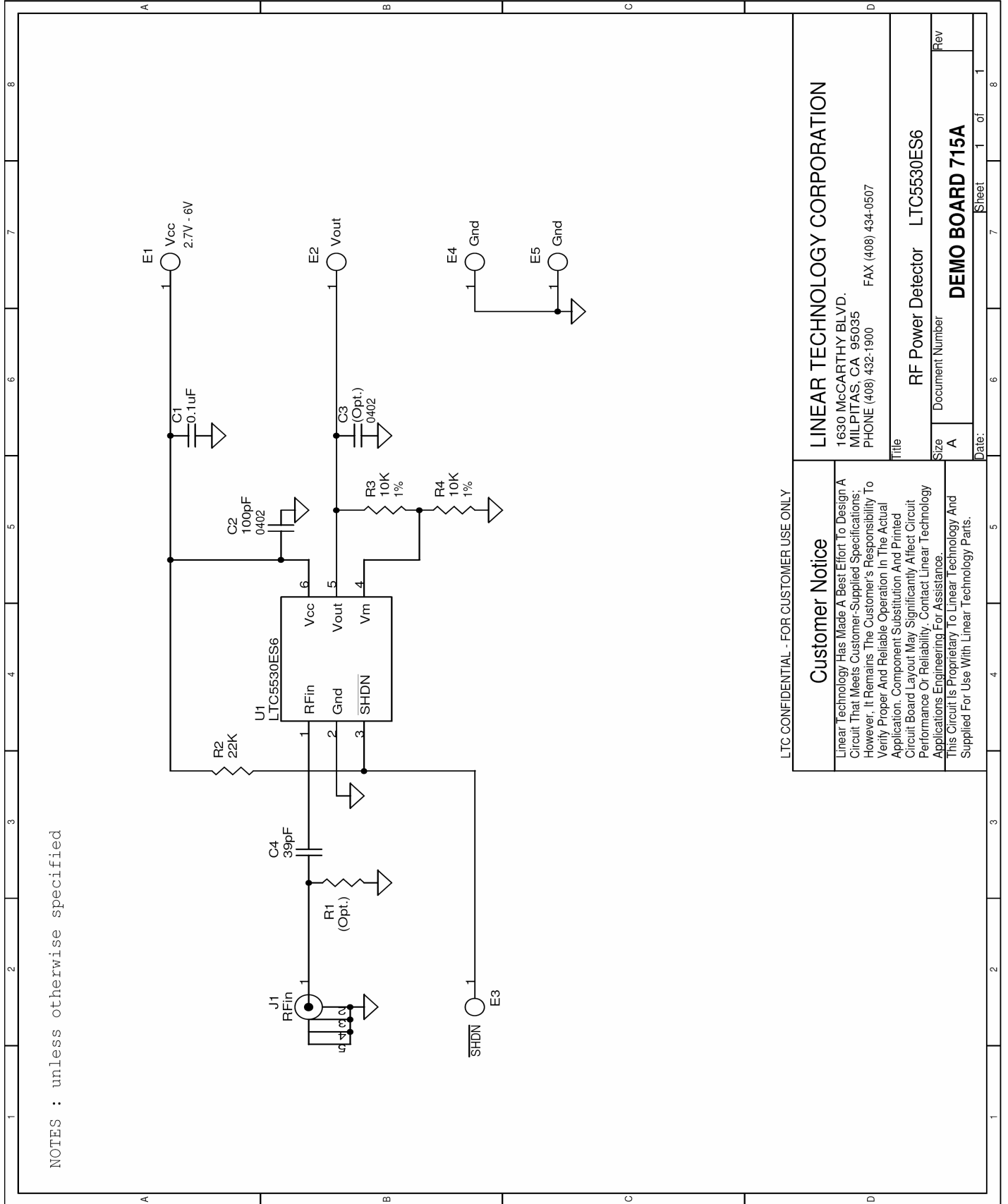


Figure 1. Proper Measurement Equipment Setup

QUICK START GUIDE FOR DEMONSTRATION CIRCUIT 715

RF POWER DETECTOR 300 MHZ TO 7000MHZ



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Linear Technology Has Made A Best Effort To Design A Circuit That Meets Customer-Supplied Specifications; However, It Remains The Customer's Responsibility To Verify Proper And Reliable Operation In The Actual Application. Component Substitution And Printed Circuit Board Layout May Significantly Affect Circuit Performance Or Reliability. Contact Linear Technology Applications Engineering For Assistance. This Circuit Is Proprietary To Linear Technology And Supplied For Use With Linear Technology Parts.

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Title
RF Power Detector LTC5530ES6

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DEMO BOARD 715A

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