

## DESCRIPTION

Demo board DC342 features the LTC1911 Low Noise, Constant Frequency, Step-Down Charge Pump.

## QUICK START PROCEDURE

Refer to Figure 1 for the connection diagram and follow the procedure below:

1. Before turning on the power supply connect a 3.3V, 500mA bench supply to the VIN and GND terminals.
2. Set jumper JP1 to the ON (lower) position.
3. Turn on the input supply and observe the output voltage with a voltmeter. The output voltage should be  $1.8V \pm 4\%$  for the DC342A-A version, and  $1.5V \pm 4\%$  for the DC342A-B version. A load ( $I_{OUT} \leq 250mA$ ) may be attached from VOUT to GND. The load current must flow from VOUT to GND because the LTC1911 is only designed to source current and cannot sink current.
4. To shutdown the LTC1911 ( $V_{OUT} = 0V$ ) set JP1 to the OFF (upper) position.
2. Set jumper JP1 to the ON (lower) position.
3. Connect a  $50\Omega$  load from VOUT to GND. Connect a scope probe to VOUT, and clip the scope probe ground lead to GND.
4. Use a low leakage NMOS FET ( $<1\mu A$  when off) such as a 2N7002, to short SS/SD to GND. Connect the Source to GND, the Drain to SS/SD and drive the Gate with a 50Hz 5V square wave.
5. Turn on the input power supply and observe the output trace on the scope.

## SOFT-START OPERATION

To observe soft-start operation refer to Figure 2 proper equipment setup and follow the procedure outlined below.

1. Before turning on the power supply connect a 3.3V, 500mA bench supply to the VIN and GND terminals.
2. Set jumper JP1 to the ON (lower) position.
3. Turn on the input. Attach desired load ( $I_{OUT} \leq 250mA$ ) from VOUT to GND. The load current must flow from VOUT to GND as stated previously.

## RIPPLE MEASUREMENTS

To observe the voltage ripple at VIN or VOUT refer to Figure 3 and Figure 4 for proper equipment setup and follow the procedure outlined below.

1. Before turning on the power supply connect a 3.3V, 500mA bench supply to the VIN and GND terminals.
2. Set jumper JP1 to the ON (lower) position.
3. Turn on the input. Attach desired load ( $I_{OUT} \leq 250mA$ ) from VOUT to GND. The load current must flow from VOUT to GND as stated previously.

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4. When measuring the input or output voltage ripple, avoid a long ground return for the oscilloscope probe by using the following procedure:

- Remove the grabber and outer plastic sleeve from the scope probe.
- Measure the input ripple by touching the probe between VIN and GND as shown in Figure 3.
- Measure the output ripple by touching the probe between VOUT and GND as shown in Figure 4.

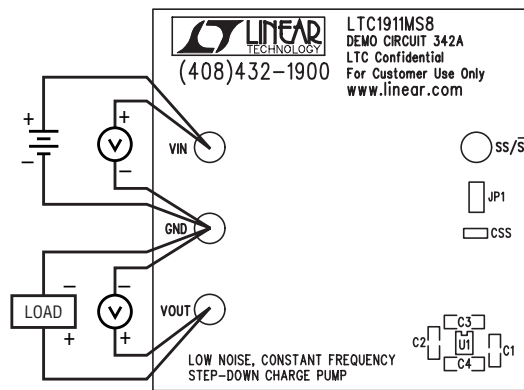


Figure 1. Proper Measurement Equipment Setup

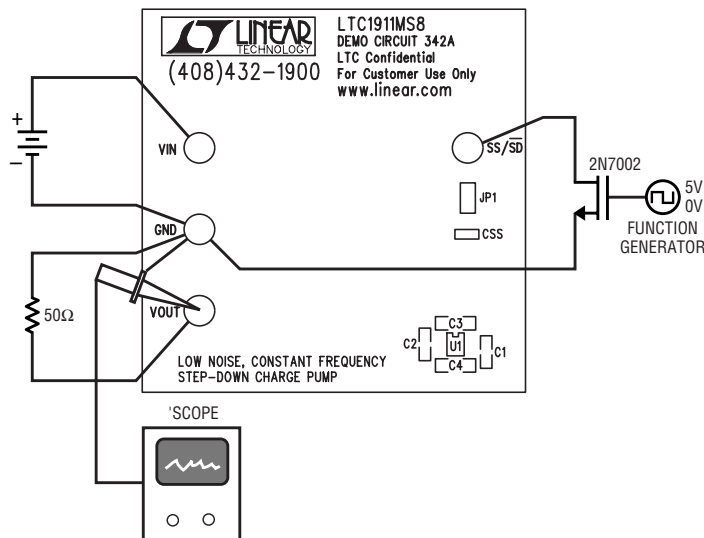


Figure 2. Observing Soft Start Operation

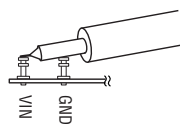


Figure 3. Proper Ripple Measurement Technique for Input

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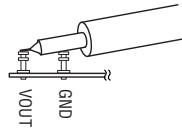


Figure 4. Proper Ripple Measurement Technique for Output