ON Semiconductor® ON

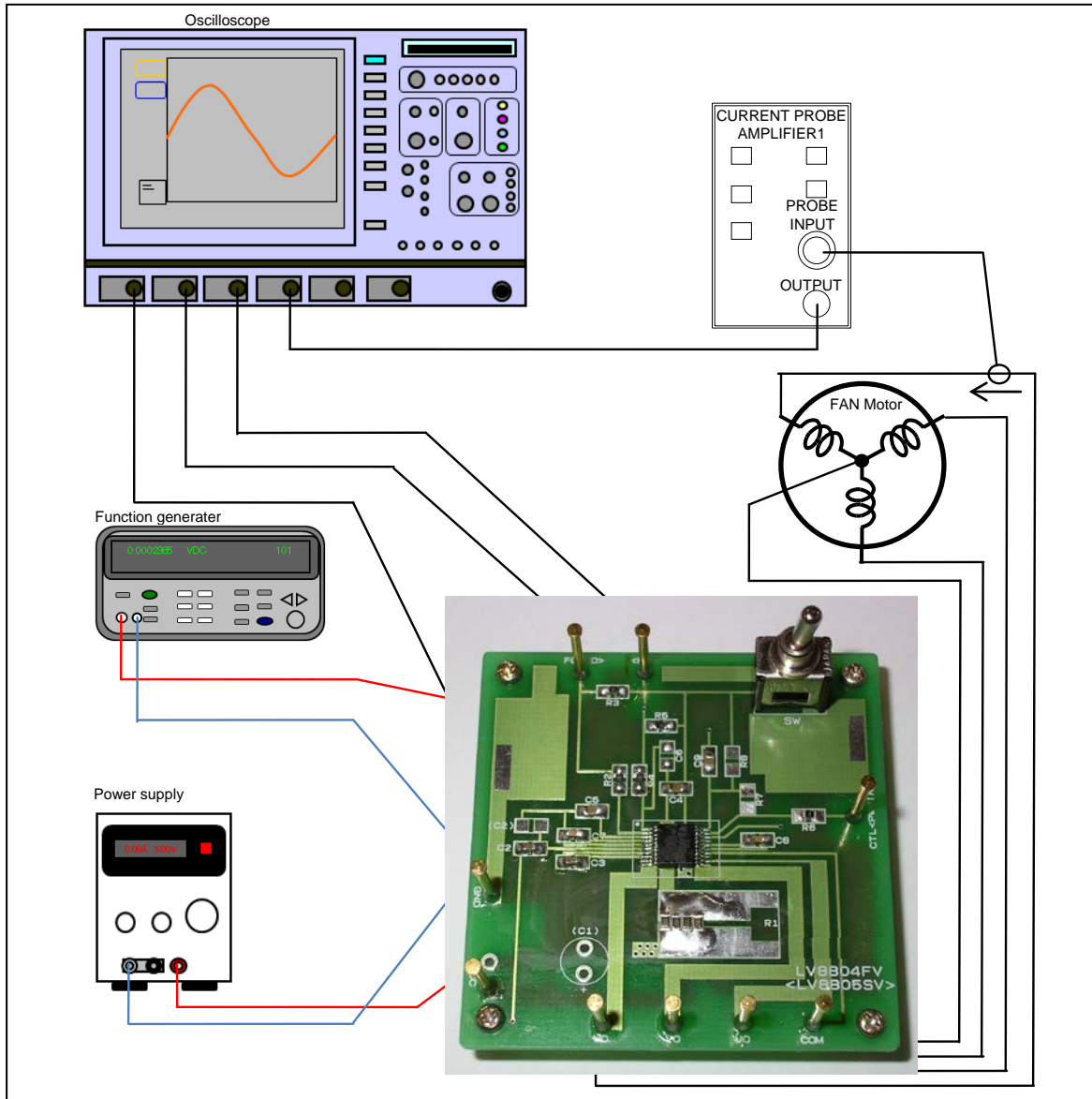# Test Procedure for the LV8805SVGEVB Evaluation Board


Table: Required Equipment

Equipment	Efficiency
Power supply	12V-1A
Function generater	PWM 0-5V /20-50kHz
Oscilloscope	4 channel
Current probe	-
LV8805SV Evaluation Board	-
Motor	12V-3W

Test Procedure:

1. Connect the test setup as shown above.

2. Initial check
   Boot up at the VCC = 12V.
   PWMIN=5V(PWM 100%)
   Confirm that the motor rotates smoothly and in a right direction.
   Switch the FR switch when the motor rotation direction defferent.

3. Booting check (StartUp-mode)
   Check whether a booting of a motor is stable. (Booting)
   Boot up at the VCC = 6V and 12V.
   When PWM input vary from 0% to 100%, check to chamge the motor rotation speed.
   And then, at each VCC and PWM signal check whether a motor boots 100 times in 100times.
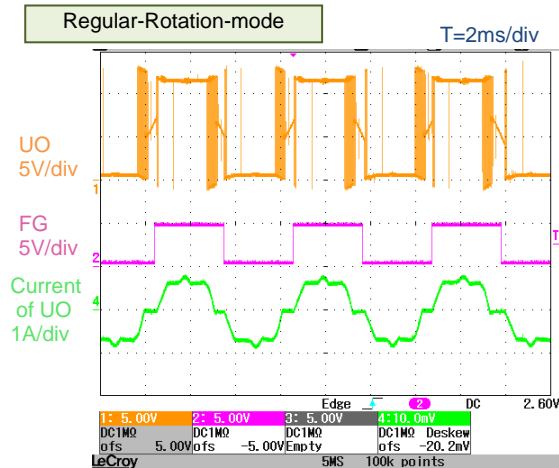
   Check the some waveforms. (Booting waveforms)
   Boot up at the VCC =12V.
   Check the WO, VO and FG voltage waveform at scope CH1, CH2 and CH3, and the output
   current waveform of WO at scope CH4 by the Oscilloscope.

   ex) These waveforms are different by each motor.
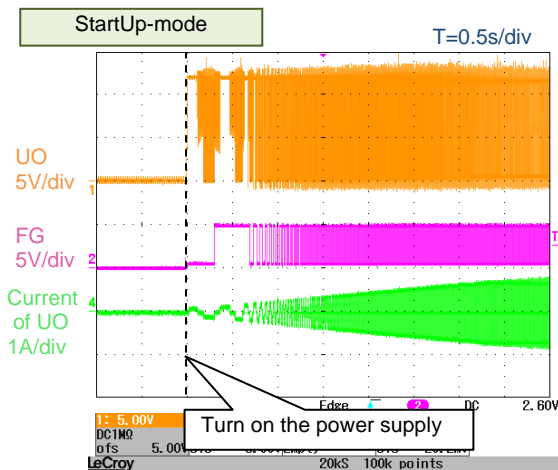
4. Normal rotation check (Regular-Rotation-mode)
   Check the some waveforms. (Rotation waveforms)
   Supply the VCC=12V. PWMIN=5V(PWM 100%)
   Check the WO, VO and FG voltage waveform at scope CH1, CH2 and CH3, and the output
   current waveform of WO at scope CH4 by the Oscilloscope.

ex) These waveforms are different by each motor.

Regular-Rotation-mode

T=2ms/div

UO
5V/div

FG
5V/div

Current
of UO
1A/div

1: 5.00V	2: 5.00V	3: 5.00V	4:10.0mV	
DC1MΩ	DC1MΩ	DC1MΩ	DC1MΩ Deskew	
ofs 5.00V	ofs −5.00V	Empty	ofs −20.2mV	
LeCroy		5MS 100k points		

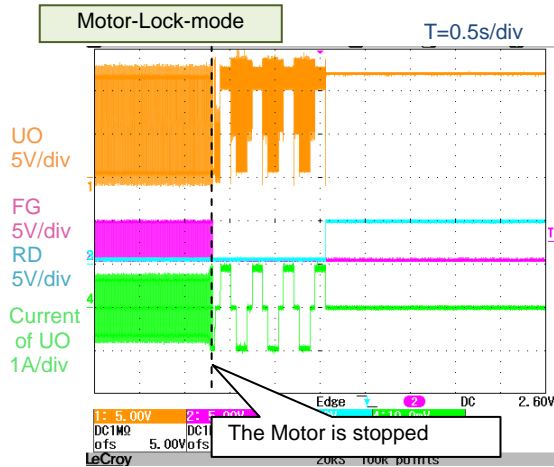5. Lock detection check (Motor-Lock-mode)
   Check the Lock detection behavior. (Lock)
   Supply the VCC=12V. PWMIN=5V(PWM 100%)
   Check the signal of WO, VO and UO is off when stop the Motor by your hand forcibly.
   Then, check the WO, VO and FG voltage waveform at scope CH1, CH2 and CH3, and the output
   current waveform of WO at scope CH4 by the Oscilloscope.

ex) These waveforms are different by each motor.

Motor-Lock-mode

T=0.5s/div

UO
5V/div

FG
5V/div
RD
5V/div

Current
of UO
1A/div

The Motor is stopped

1: 5.00V	2: 5.00V			
DC1MΩ	DC1			
ofs 5.00V	ofs			
LeCroy		20kS 100k points		

6. Checking result
   A sample of checking result is shown below.

VCC	CTL voltage	Booting	Rotation speed (rpm)	Rotation waveforms	Io	Lock
12V	0V	100/100 OK	-	OK	value	OK
	1.5V	100/100 OK	-	OK	value	OK
	2.5V	100/100 OK	-	OK	value	OK
6V	0V	100/100 OK	-	OK	value	OK
	1.5V	100/100 OK	-	OK	value	OK
	2.5V	100/100 OK	-	OK	value	OK