

## Test Procedure for the LB1939TGEVB Evaluation Board

### For stepper motor control in constant voltage mode

Please contact RFG1-terminal and RFG2-terminal and PGND-terminal.  
Therefore R1 resistor and C4 capacitor is not mount evaluation board.

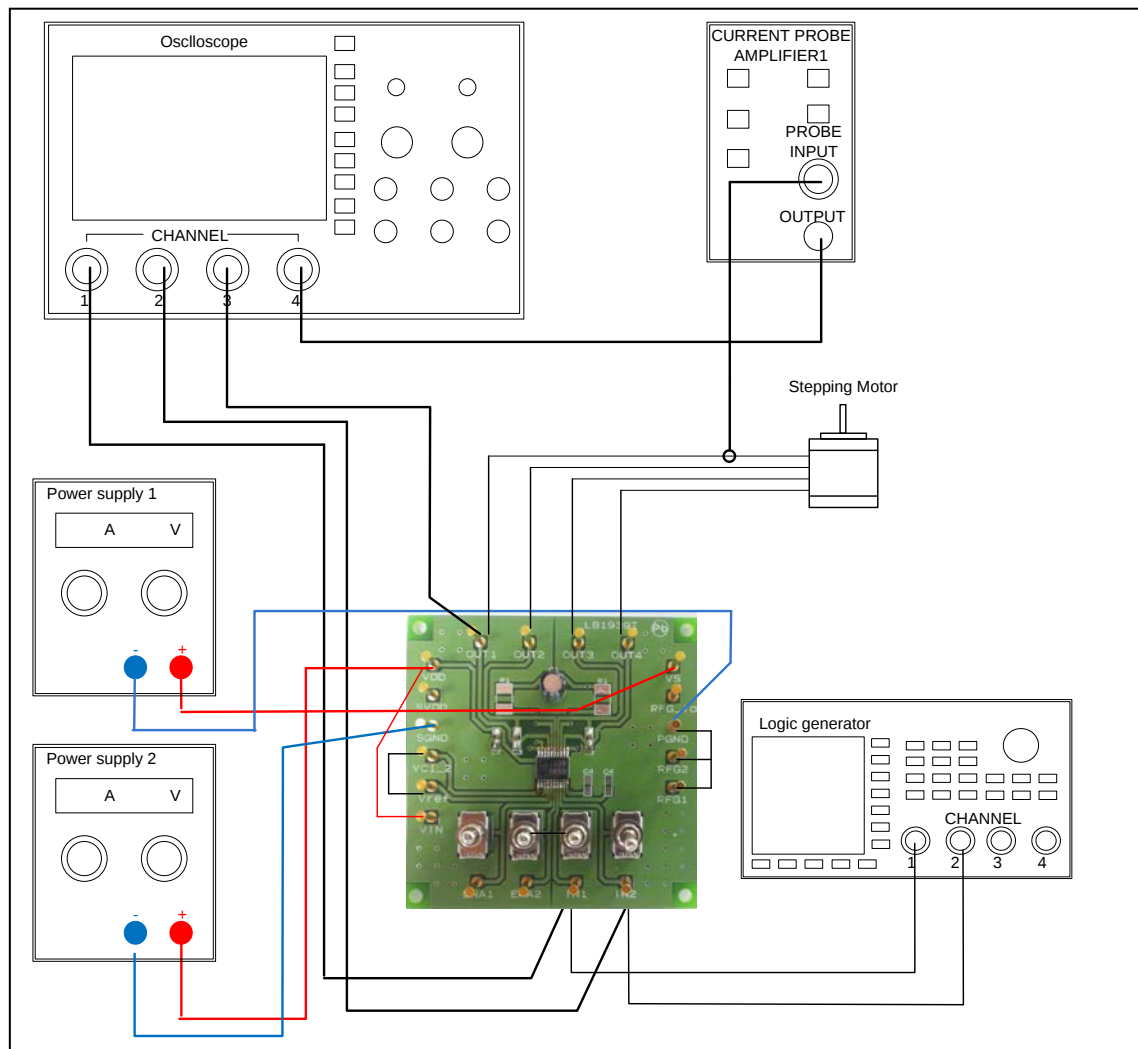


Table1: Required Equipment

| Equipment                 | Efficiency |
|---------------------------|------------|
| Power supply1             | 12V-1A     |
| Power supply2             | 10V-0.5A   |
| Logic generator           | 200kHz     |
| Oscilloscope              | 4 channel  |
| Current probe1            |            |
| LB1909MC Evaluation Board |            |
| Stepper Motor             | 5V-0.4A    |

## Test Procedure:

1. Connect the test setup as shown above.
2. Set it according to the following guide.

[Supply Voltage] VDD, VS (1.9V to 6.5V) : Power Supply for LSI  
VIN (2.0 to 6.0V) : Logic "High" voltage for toggle switch

[Toggle Switch State] Upper Side: High (VIN)  
Middle: Open, enable to external logic input  
Lower Side: Low (GND)

### [Operation Guide]

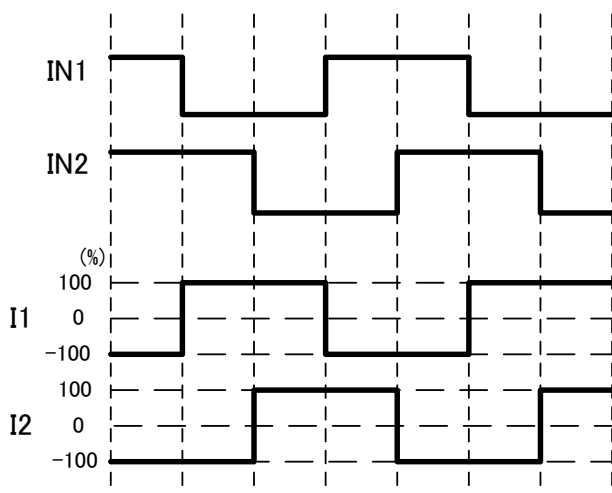
1. Initial Condition Setting: Set "Open" the toggle switches ENA, IN1 and IN2.
2. Power Supply: Supply DC voltage to VS and VDD and VIN.
3. Ready for Operation from Standby State: Turn "High" the ENA terminal toggle switch.
4. Motor Operation: Input the signal which is in condition to want to operate into IN1 and IN2.

3. Check the IN1, IN2 and OUT1 terminal voltage at scope CH1, CH2 and CH3, and the output current waveform at scope CH4.

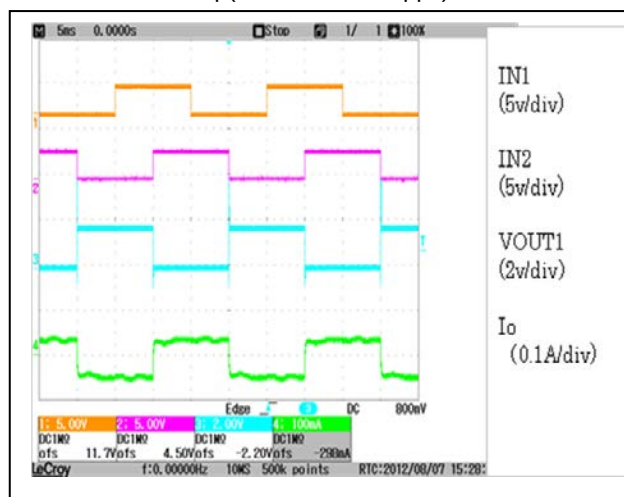
Table2: Desired Results

| INPUT                                                               | OUTPUT                            |
|---------------------------------------------------------------------|-----------------------------------|
| VCC=3.3V<br>VDD=3.3V,VIN=3.3V<br>ENA=H<br>IN1, IN2=Full-step signal | * Refer to the following waveform |

Typical current waveform



LB1939T Full-Step(VCC=3.3V, 200pps)



### For stepper motor control in constant current mode

Evalboard is constant voltage drive.

If Eval board use constant current driving, Please Eval board changing below  
It remove C3 capacitor and mount R1 and C4 parts.

Finally contact RFG-Io and PGND.

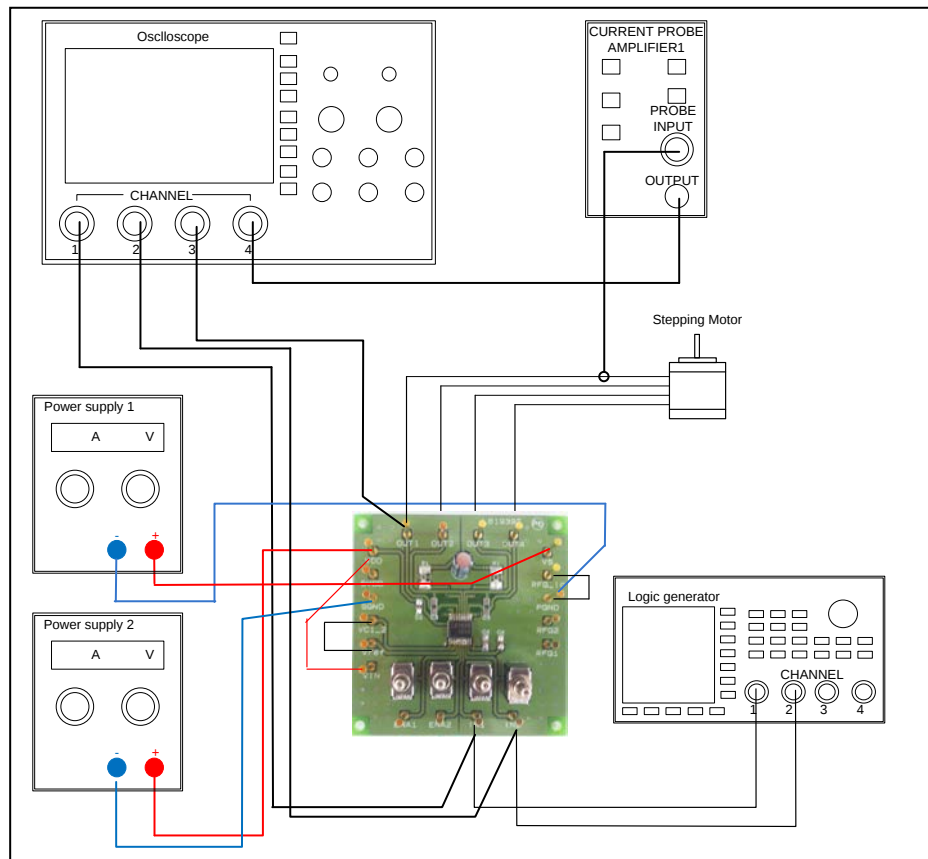


Table3: Required Equipment

| Equipment                 | Efficiency |
|---------------------------|------------|
| Power supply1             | 12V-1A     |
| Power supply2             | 10V-0.5A   |
| Logic generator           | 200kHz     |
| Oscilloscope              | 4 channel  |
| Current probe1            |            |
| LB1909MC Evaluation Board |            |
| Stepper Motor             | 5V-0.4A    |

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### [Operation Guide]

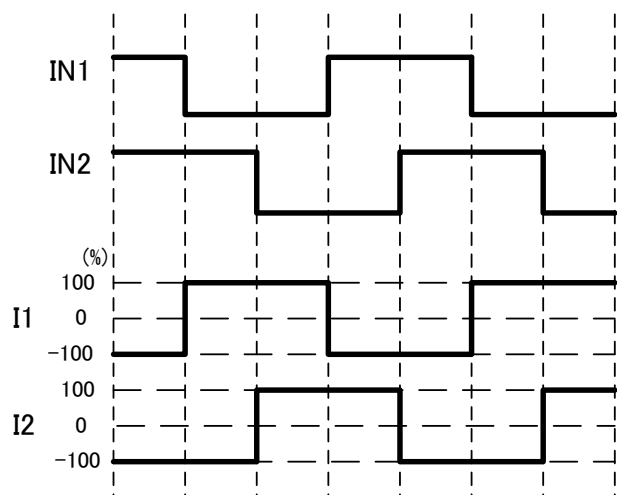
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2. Power Supply: Supply DC voltage to VS and VDD and VIN.
3. Ready for Operation from Standby State: Turn "High" the ENA terminal toggle switch.
4. Motor Operation: Input the signal which is in condition to want to operate into IN1 and IN2.

3. Check the IN1, IN2 and OUT1 terminal voltage at scope CH1, CH2 and CH3, and the output current waveform at scope CH4.

Table4: Desired Results

| INPUT                                                                | OUTPUT                            |
|----------------------------------------------------------------------|-----------------------------------|
| VCC=3.3V<br>VDD=3.3V, VIN=3.3V<br>ENA=H<br>IN1, IN2=Full-step signal | * Refer to the following waveform |

### Typical current waveform



### LB1939T Full-Step(VCC=3.3V, 200pps)

