

Test Procedure for the LB1948MC Evaluation Board

For stepper motor control

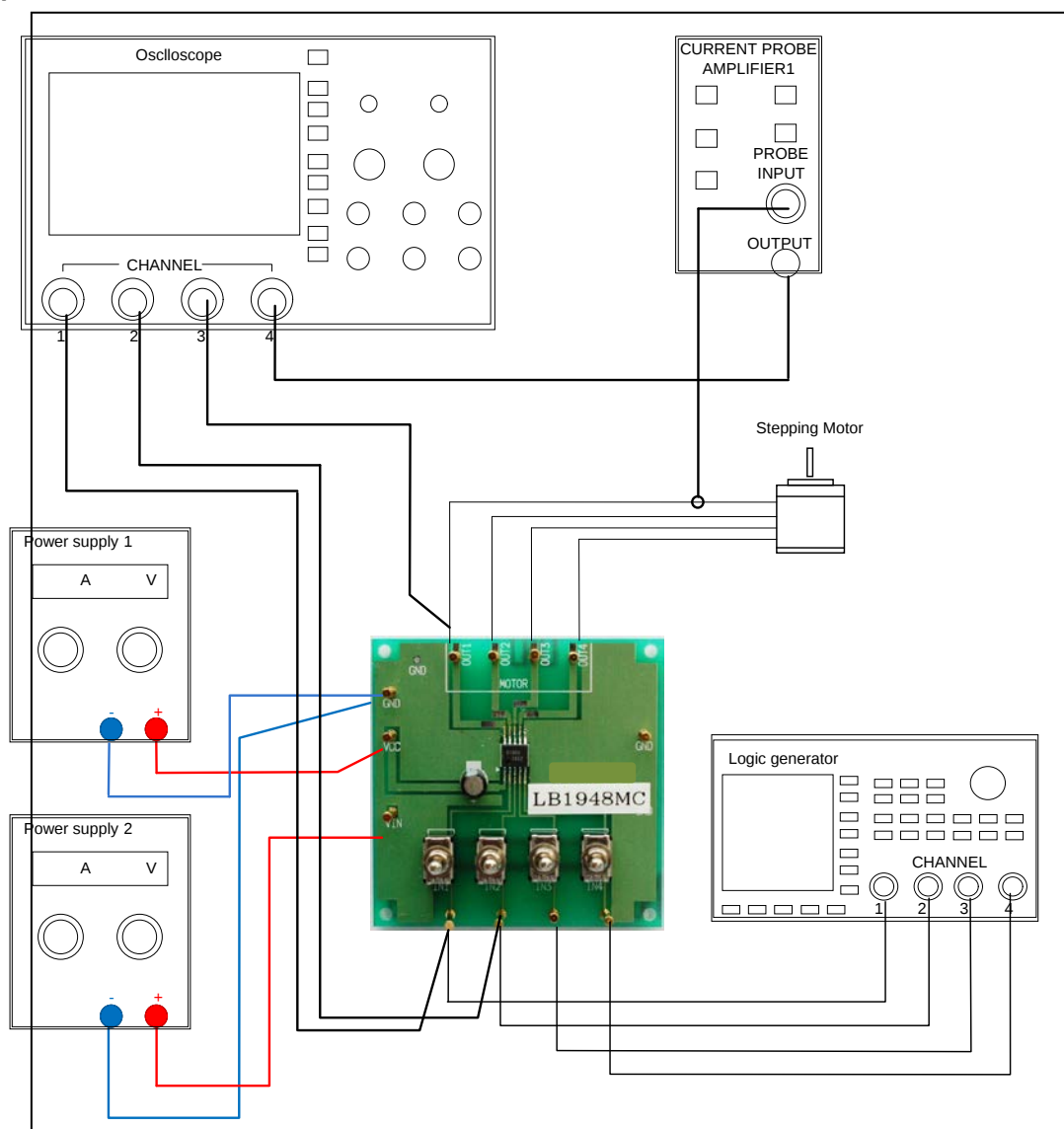


Table1: Required Equipment

Equipment	Efficiency
Power supply1	25V-3A
Power supply2	10V-0.5A
Logic generator	
Oscilloscope	4 channel
Current probe1	
LB1948MC Evaluation Board	
Stepper Motor	25V-2A

Test Procedure:

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

[Supply Voltage] VCC (2.5 to 16V) : Power Supply for LSI
VIN (1.8 to 10V) : 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]

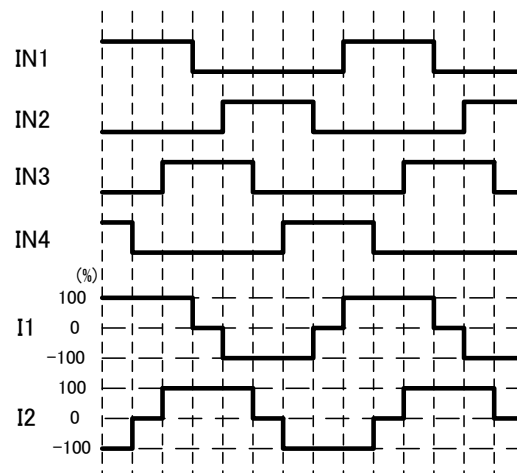
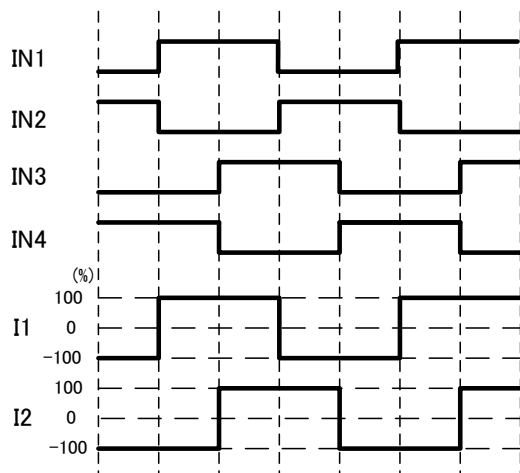
1. Initial Condition Setting: Set "Open" the toggle switches IN1-IN4.
2. Power Supply: Supply DC voltage to VCC and VIN.
3. Motor Operation: Input the signal which is in condition to want to operate Full-step , Half-step into IN1-IN4.

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

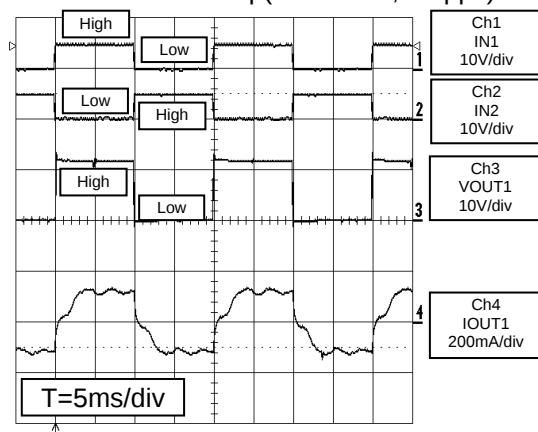
Table2: Desired Results

INPUT	OUTPUT
VCC=12V VIN=5V IN1-IN4=Full-step or Half-step signal	* Refer to the following waveform

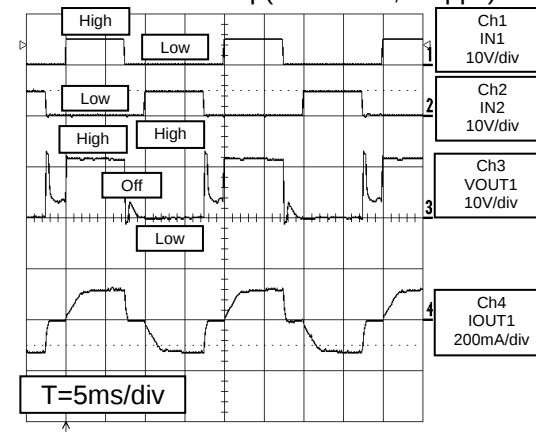
Typical current waveform



LB1948MC Full-Step(VCC=12V,200pps)



LB1948MC Half-Step(VCC=12V,200pps)



For DC motor control

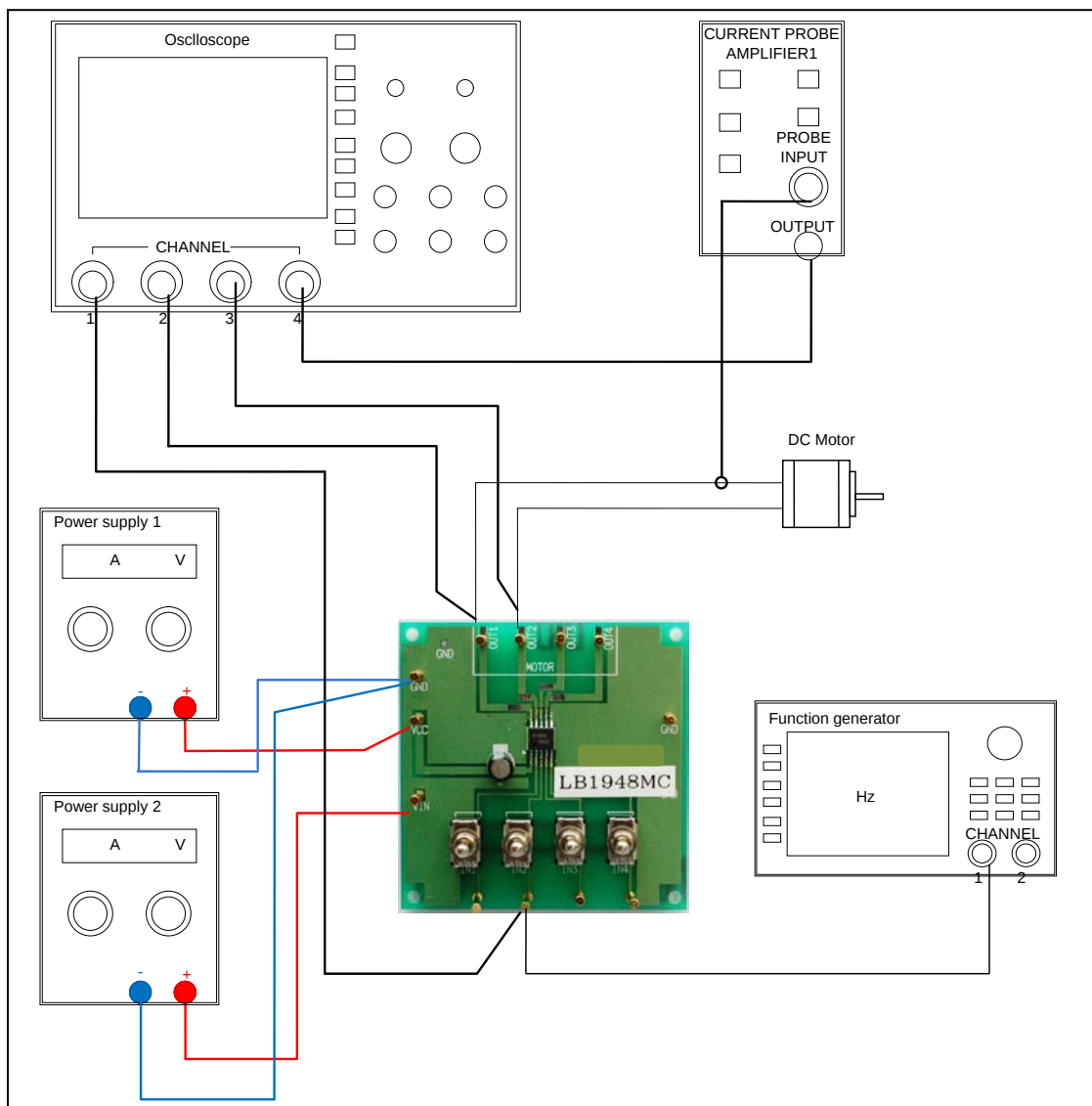


Table3: Required Equipment

Equipment	Efficiency
Power supply1	25V-3A
Power supply2	10V-0.5A
Function generator	200kHz
Oscilloscope	4 channel
Current probe	
LB1948MC Evaluation Board	
DC Motor	25V-2A



Test Procedure:

1. Connect the test setup as shown above.

2. Set it according to the following guide.

[Supply Voltage] VCC (2.5 to 16V) : Power Supply for LSI
 VIN (1.8 to 10V) : 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]

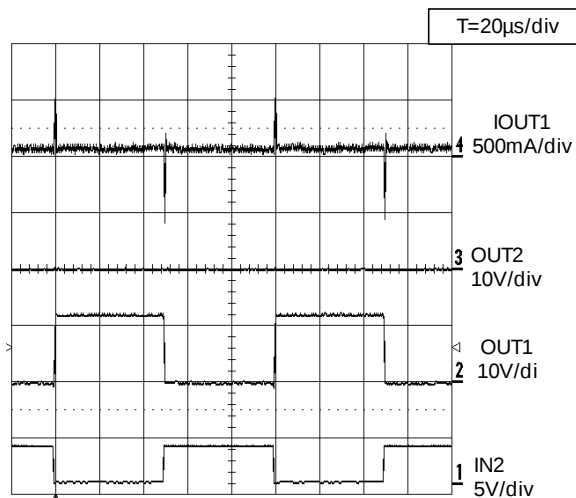
1. Initial Condition Setting: Set "Open" the toggle switches IN1-IN4.
2. Power Supply: Supply DC voltage to VCC and VIN.
3. Motor Operation: Set IN1, IN2, IN3, and IN4 terminals according to the purpose.

3. Check the IN2, OUT1, and OUT2 terminal voltage at scope CH1, CH2, and CH3, and the output current waveform at scope CH4.

4. Connected in the same way as the 1ch side and measure the 2ch side .

Table4: Desired Results

INPUT	OUTPUT
VCC=12V VIN=5V IN1=High IN2=10KHz (Duty50%)	* Refer to the following waveform



DCM output control logic

Input				Output				Remarks
IN1	IN2	IN3	IN4	OUT1	OUT2	OUT3	OUT4	
L	L	L	L	OFF	OFF	OFF	OFF	Stand-by
L	L			OFF	OFF			Stand-by
H	L			H	L			Forward
L	H			L	H			Reverse
H	H			L	L			Brake
		L	L			OFF	OFF	Stand-by
		H	L			H	L	Forward
		L	H			L	H	Reverse
		H	H			L	L	Brake