Test Procedure for the LV8746VGEVB Evaluation Board

For Clock Input Control

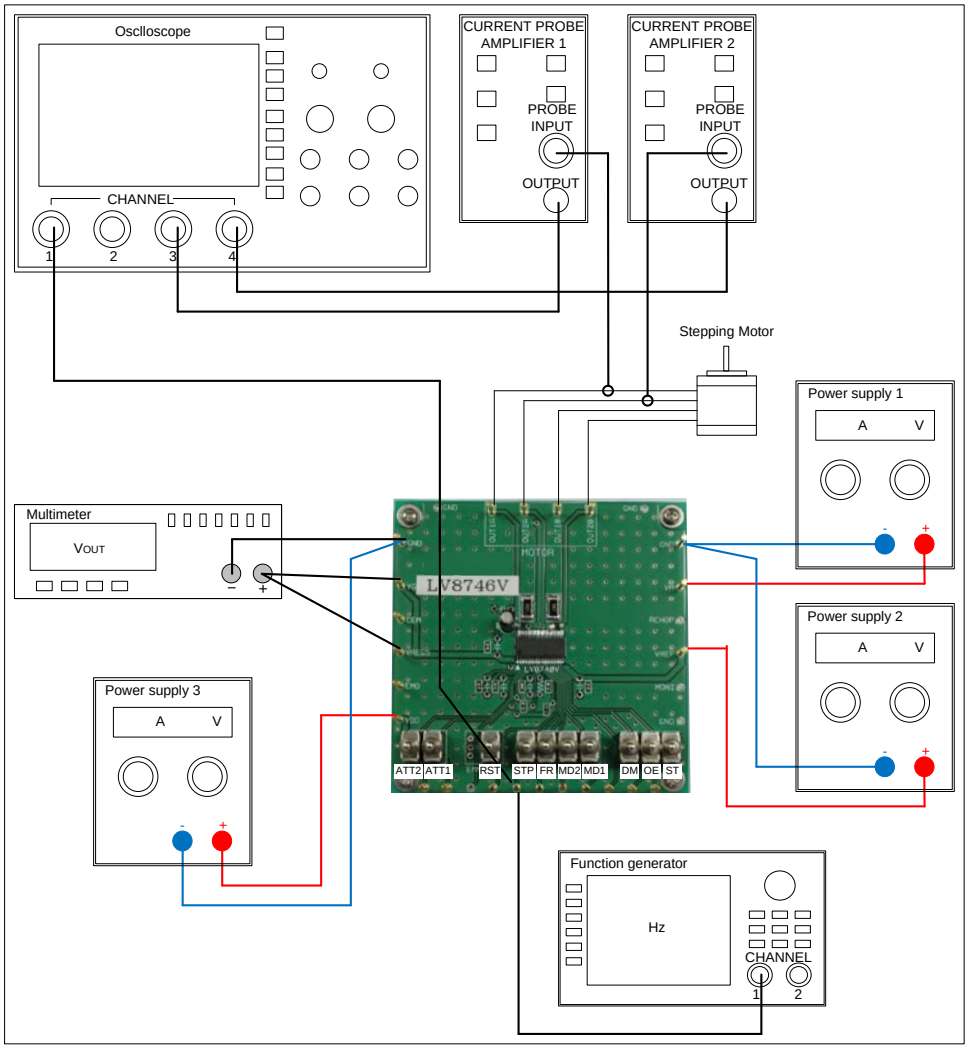


Table1: Required Equipment

Equipment	Efficiency
Power supply1	35V-5A
Power supply2	5V-0.5A
Power supply3	10V-1A
Function generator	200kHz
Multimeter	-
Oscilloscope	4 channel
Current probe1	-
Current probe2	-
LV8746V Evaluation Board	-
Stepper Motor	35V-3A

Test Procedure:

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

Supply Voltage

- VM (9 to 35V): Power Supply for LSI
- VREF (0 to 3V): Const. Current Control for Reference Voltage
- VDD (2 to 5V): Logic “High” voltage for toggle switch

Toggle Switch State

- Upper Side: High (VDD)
- Middle: Open, enable to external logic input
- Lower Side: Low (GND)

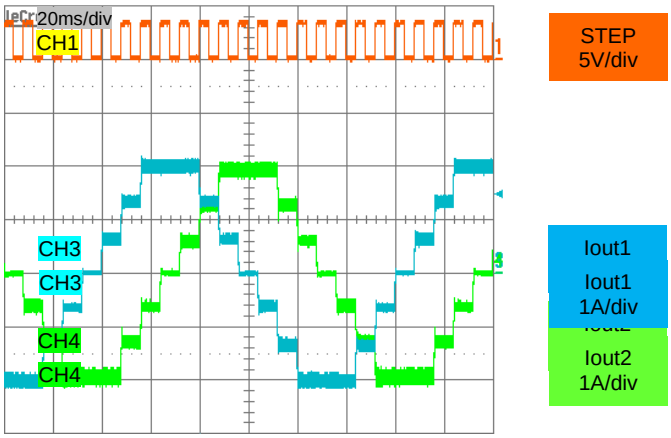
Operations Guide

1. **Initial Condition Setting:** Set “Open” the toggle switch STP/I01, and “Open or Low” the other switches.
2. **Motor Connection:** Connect the Motors between OUT1A and OUT1B, between OUT2A and OUT2B.
3. **Power Supply:** Supply DC voltage to VM, VREF and VDD.
4. **Ready for Operation from Standby State:** Turn “High” the ST terminal toggle switch. Channel 1 and 2 are into full-step initial position (100%, -100%).
5. **Motor Operation:** Input the clock signal into the terminal STP/I01.
6. **Other Setting:** (See Application Note for detail)
   i. ATT1, ATT2: Motor current attenuation.
   ii. EMM: Short circuit protection mode change.
   iii. RST/PH1: Initial Mode.
   iv. FR/I11: Motor rotation direction (CW / CCW) setting.
   v. MD1/I02, MD2/PH2: Excitation mode.
   vi. OE/I12: Output Enable.

3. Check VREG5 and VG terminal voltage at multimeter.
4. Check the STEP/DC22 and MONI terminal voltage at scope CH1 and CH2, and the output current waveform at scope CH3 and CH4.

Table2: Desired Results

INPUT	OUTPUT
VM=24V,VDD=3.3V,VREF=1.5V ST=H,DM=L EMM=L,RST/PH1=L,OE/I12=L ATT1=ATT2=L, FR/I11=L MD1/I02=MD2/PH2=H STP/I01=500Hz (Duty50%)	VREG5=4.5V to 5.5V VG=28V to 29.8V


20ms/div
CH1
CH3
CH3
CH4
CH4
STEP
5V/div
Iout1
Iout1
1A/div
Iout2
1A/div

For Parallel Input Control

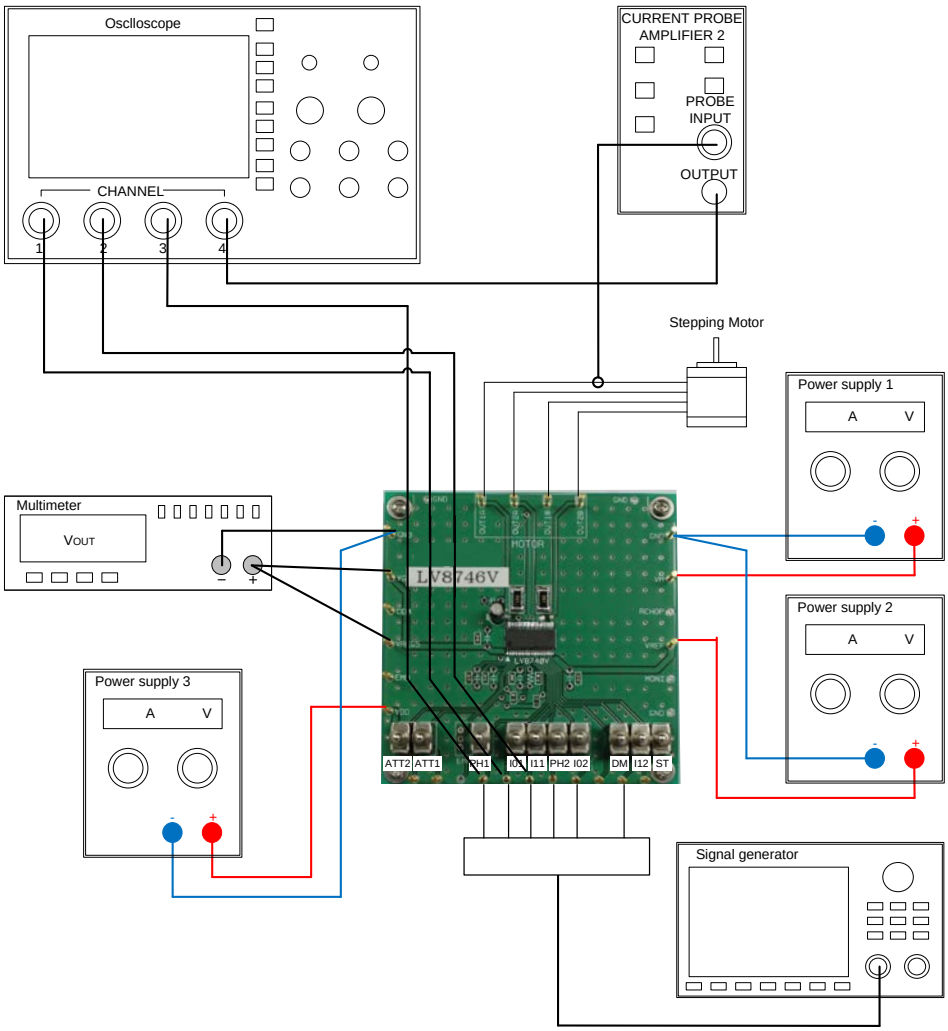


Table3: Required Equipment

Equipment	Efficiency
Power supply1	35V-5A
Power supply2	5V-0.5A
Power supply3	10V-1A
Function generator	200kHz
Multimeter	-
Oscilloscope	4 channel
Current probe	-
LV8746V Evaluation Board	-
DC Motor	35V-3A

Test Procedure:

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

Supply Voltage

- VM (9 to 35V): Power Supply for LSI
- VREF (0 to 3V): Const. Current Control for Reference Voltage
- VDD (2 to 5V): Logic "High" voltage for toggle switch

Toggle Switch State

- Upper Side: High (VDD)
- Middle: Open, enable to external logic input
- Lower Side: Low (GND)

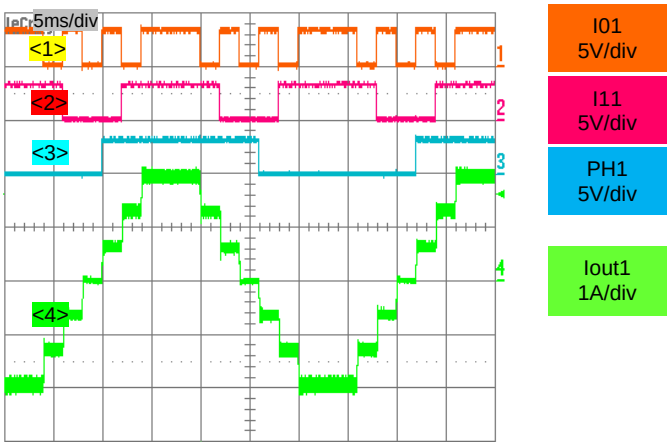
Operations Guide

1. **Initial Condition Setting:** Set "Open" the toggle switch DM, and "Open or Low" the other switches.
2. **Motor Connection:** Connect the Motor(s) between OUT1A and OUT1B, between OUT2A and OUT2B.
3. **Power Supply:** Supply DC voltage to VM, VREF and VDD.
4. **Ready for Operation from Standby State:** Turn "High" the ST and DM terminal toggle switch.
5. **Motor Operation**: Set STP/I01, FR1/I11, RST/PH1, MD1/I02, OE/I12 and MD2/PH2 terminals according to the purpose.
6. **Other Setting:** (See Application Note for detail)
   i. ATT1, ATT2: Motor current attenuation.

3. Check VREG5 and VG terminal voltage at multimeter.
4. Check the STP/I01, FR1/I11 and RST/PH1; terminal voltage at scope CH1, CH2 and CH3, and the output current waveform at scope CH4.
5. Switch to channel 2(MD1/I02, OE/I12, MD2/PH2) as well as channel 1(STP/I01, FR1/I11, RST/PH1) and measure it.

Table4: Desired Results

INPUT	OUTPUT
VM=24V,VDD=3.3V,VREF=1.5V ST=H,DM=H EMM=L,ATT1=ATT2=L,	VREG5=4.5V to 5.5V VG=28V to 29.8V


5ms/div
<1>
<2>
<3>
<4>
I01
5V/div
I11
5V/div
PH1
5V/div
Iout1
1A/div