

Lab

Hall Motor

Run the BLDC demo with a Graphical FreeMASTER interface.

If connected via FreeMASTER you can observe speed, voltage and motor current. As well you can set:

- desired motor speed by clicking on Speed gauge
- motor current limit by clicking on a Motor Current gauge. By default the limit is set to 1Amp.

The lab shows how to run a BLDC motor with a hall-effect sensor, which is a basic motor control application.

Illustrates:

- Simple MC56F8006 motor control application
- how to configure ADC, PDB, QuadTimer, PIT, GPIO and PWM peripherals for a basic motor control application
- how to implement PI controller with PE beans
- usage of ADCSC1A and ADCSC1B to get two automatically triggered samples
- initialization of ADC channel offset at start-up.
- usage of PWM Hardware acceleration (Automatic Value Register Load, Channel Mask and Swap Features)
- advanced features of FreeMASTER - recorder to monitor motor current, graphical control interface

Configuration:

MC56F8006DEMO:

JP4 connect 1-2 .. conveys power to the MC56F8006DEMO card

JP3 no connection .. the S08 does not need to power the MC56F8006

TX_EN connect 1-2 .. serial port for Freemaster will be thru the J4 USB

TX_EN connect 1-2 .. same as above.

J4 connect to PC with USB cable

APMOTOR56F8000 motor demo card:

Connect P2 to 9vDC input with positive center.

Note: the 9 Volts is used directly on the motor DCB_POS bus, so please use 9V.

This board will power the MC56F8006DEMO board when the two boards are plugged together.

Place so that both power jacks of both boards are on the same side.

Do not use the power jack on the MC56F8006DEMO card for this demo.

Motor can be both current limited (with some overshoot) and speed limited.

Motor can be controlled from switches on board, or from Freemaster (preferred)..