

MC56F8006

MC56F8006_LED_LAB

This section explains how to set up and use the MC56F8006DEMO_LED_LAB example application. The example application allows the user to try out several features on Freescale's MC56F8006 digital signal controller (DSC).

Setting up the demo

1. Connect the included power supply to the PWR connector. Connect the MC56F8006DEMO board to the PC with the USB cable and the included USBTAP ONCE (DSC) CWH-UTP-ONCE-HE as follows. Connect the USB cable of the USBTAP to the PC after the PC starts running. Then connect the JTAG connector of the USBTAP to the JTAG connector of the MC56F8006DEMO, observing the key in the connector. The jumper configurations for this lab are:
 - RX_EN: connect 2_3
 - TX_EN: connect 2_3
 - JP3: connected
 - JP4: connected
 - No other connections
2. Open both the CodeWarrior IDE and the MC56F8006_LED_LAB project.
3. To compile the project and program the DSC, press F5 once in the IDE of with the project. This will compile the project MC56F8006_LED_LAB, launch the debugger application and program the DSC.

The demo is now ready to run.

Running the

MC56F8006_LED_LAB demo

- Now press F5 again. LED1, LED2, LED3, LED4, LED5 and LED6 will all blink in a complex pattern.
- To try a breakpoint, click on the Files tab within the project window (next to the Link Order tab). Then click the plus sign next to User Modules to expand it. Double click the Events.c file to expose the source code for the timer ISR. Place a breakpoint at one of the _Toggle statements or the count++ statement.

Observe that the breakpoint is hit even though it was added after the application started running.

MC56F8006_serial_lab

This section explains how to set up and use the MC56F8006DEMO_serial_lab example application. The example application allows the user the SCI serial port via USB on Freescale's MC56F8006 DSC.

Several of the slides may be skipped unless the contents of the onboard S08 are to be re-flashed. Provision is made for re-flashing the S08 in case the S08 should ever be used for a different purpose, and this lab needs to be run.

As delivered, the MC56F8006DEMO-T board does not need to have the S08 re-flashed.

MC56F8006_freemaster_lab

This section explains how to set up and use the MC56F8006DEMO_freemaster_lab example application. The example application allows the user to try out the SCI serial port via USB on Freescale's MC56F8006 DSC, and use it to provide a real-time graphical window into the memory of the MC56F8006.

It is advised to first run the MC56F8006_serial_lab to verify the operation of the serial interfaces.

MC56F8006_PGA_lab

This section explains how to set up and use the MC56F8006DEMO_PGA_lab example application. The example application allows the user to try out the programmable gain amplifier (PGA) on Freescale's MC56F8006 DSC, and use it to provide a real-time graphical LED readout of twelve bits representing an analog voltage read by the analog-to-digital converter. The PGA is used to boost the signal level so that smaller voltages may be detected.

MC56F8006_FFT_lab

This section explains how to set up and use the MC56F8006DEMO_FFT_lab example application. The example application allows the user to try out the Freescale's MC56F8006 DSC, and use it to provide a real-time frequency analysis of an analog input.

MC56F8006_FIR_lab

This section explains how to design and set up and use the an FIR on the DSC. It uses the MC56F8006DEMO_FIR_lab example application. The example application allows the user to try out the Freescale's MC56F8006 DSC, and use it to provide a real-time finite impulse response based low pass filter.

MC56F8006_hall_motor_lab

This section uses the MC56F8006DEMO_hall_motor_lab example application. Both the APMOTOR56F8000 motor demo card (available from Freescale) and the MC56F8006DEMO are required for this lab.