The Stellaris® Family Development Kit

The Luminary Micro Stellaris® Family DK-LM3S815 Development Kit provides the hardware and software tools that engineers need to develop and prototype embedded applications right out of the box: the development board, demo applications, and software development tools. This kit supports development for the LM3S610, LM3S612, LM3S615, LM3S812, and LM3S815 microcontrollers.

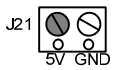
Development Board

The Stellaris Family Development Board is configured for immediate use. You just need to apply power to the board. To power the board, there are three options:

1. A free USB port on your PC can power the development board using the USB connector on J18. The USB is capable of sourcing up to 500 mA for each attached device, which is sufficient for the development board. If connecting the board through a USB hub, it must be a powered hub (500-mA port). To use the USB power option:
    a. Slide switch S1 towards the board edge.
    b. Connect a USB cable from the USB hub to the USB-B receptacle J18.
    c. Slide switch S1 towards the board center to turn on power.

2. A 5-V (barrel-type connector) power supply can be connected to J19. The supply should be center lead positive. To use this option:
    a. Slide switch S1 towards the center of the board.
    b. Connect a 5-V supply with a 2.1-mm plug to power jack J19.
    c. Slide switch S1 towards the board edge to turn on power.

3. A 5-V bench supply can be connected to J21. To use this option:
    a. Slide switch S1 towards the center of the board.
    b. Connect a 5-V supply with two wires to terminal block J21.
    c. Connect the 5-V wire to J21-1 and the ground wire to J21-2.
    d. Slide switch S1 towards the board edge to turn on power.



Once you apply power to the board, the power LEDs light up.

Important: When power is applied for the first time, you will be prompted that a new USB device has been found. If running Windows, select the “Advanced” driver installation option that allows you to point to a specific installation path. Point Windows to the Luminary Micro CD (specifically the Tools/FTDI/Win2k-XP directory) and select the driver file. You will need to install the driver twice; once for each of the two channels of the FTDI device (these will be called Channel A and Channel B).

Quickstart Application

The development board comes preprogrammed with a quickstart application. Once you have powered the board, this application runs automatically. The Luminary Micro name and logo appear on the LCD for a few seconds and then the demo application begins to run. If it does not, ensure the daughterboard is firmly seated on the motherboard. See the *Stellaris® Family Development Board User’s Manual* for more information.

The quickstart application uses the ADC to sample the photocell to vary the frequency generated by the PWM. The PWM signal is used to drive the buzzer on the development board to create an audible tone (beep). The potentiometer (POT1) is sampled, using the on-chip comparator, to vary the rate of the beeping. The beep rate increases as the potentiometer is turned clockwise and decreases as the potentiometer is turned counterclockwise. The potentiometer setting along with the tone "note" is displayed on the LCD, and a log of the readings is output on the UART at 115,200, 8-n-1. Use the DB9 connector labeled SER0 on the board to view this output.

The user pushbutton (SW3) can be used to mute the buzzer. When the buzzer is muted, the LCD and UART still show the setting.

The quickstart application source is available in the Firmware Development Package examples on the Luminary Micro Stellaris Family Development Kit CD as the DK-LM3S815 Quickstart Application example (qs_dk-lm3s815).

In the development board default jumper configuration, the pushbutton does not actually mute the beep. In order for the quickstart application to fully work, the following jumper wire connections must be made:

- JP19-2 to J6-6

Software Development Tools

The next step is to install and run the software development tools included in the development kit. For more information, see the quickstart guides included on the Luminary Micro Stellaris Family Development Kit CD. Additional tools may be available through the Luminary Micro website at www.luminarymicro.com.

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