Quick*START*

This document provides a brief introduction and instructions to install and run the Platform Manager™ Development Kit on Windows 7/Vista/XP. Please refer to the complete documentation at www.latticesemi.com/ptmdevkit for more information.

1 Check Kit Contents

The Platform Manager Development Kit contains the following items:

- Platform Manager Evaluation Board pre-loaded with Platform Manager Demo
- USB connector cable
- 5V DC wall adapter power supply
- *QuickSTART Guide*

Static electricity can shorten the lifespan of electronic components. Please handle the kit components carefully.

2 Power the Platform Manager Evaluation Board

Power the board by connecting the 5V wall adapter plug to the evaluation board. Running the pre-loaded demos does not require connecting the provided USB cable to a PC. The cable is required to modify the pre-loaded demo or to load additional IP cores and reference designs.
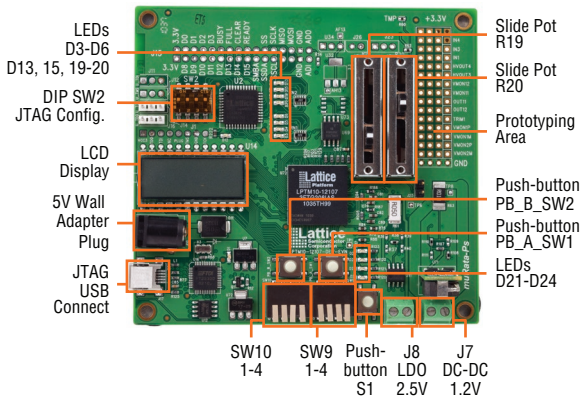
The latest USB drivers can be downloaded in a ZIP file from www.latticesemi.com/ptmdevkit. Complete documentation, including the Platform Manager Development Kit User's Guide is available from the same location.

In the following steps, the evaluation board will be powered and made ready to run the preloaded demonstrations.

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Run the Platform Manager Demo

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Initial board setup:

- Set all DIP switches in SW9 and SW10 to the up/off position.
- Set all DIP switches in SW2 to the on position.
- Set slide potentiometers (pots) R19 and R20 to the down position, toward the center of the board.
- No jumpers should be installed.

Demo 1 – Test Board Power, LED D1, and All Power Supplies

Demo 1 shows the ability of the Platform Manager to monitor and sequence input power rails and on-board supplies. There are five supplies connected to five seperate VMON inputs on the Platform Manager Evaluation Board. The first three supplies, 5V, 3.3V, and 2.5V, are power rails that the Platform Manager does not enable; it is only monitors them. The second 2.5V supply is an LDO that the Platform Manager enables and then monitors, and the 1.2V supply is a DC-DC converter that the Platform Manager enables and then monitors. There is also control from the Margin/Trim outputs on the Platform Manager to each of these supplies. The table below shows how the four LEDs in the display follow the progress of the monitoring, enabling, and sequencing.

- Plug the 5V wall plug supply into the board supply plug.
  - The blue LED D1 is on and will remain on while the board is powered.
  - LEDs D21-D23 cycle through steps 1-6 as shown in the table below. Failure to cycle through the steps indicates a power supply error.

Step	D24	D23	D22	D21	Function
1	Off	Off	Off	ON	Wait for 5V supply good
2	Off	Off	ON	Off	Wait for 3.3V supply good
3	Off	Off	ON	ON	Wait for 2.5V supply good
4	Off	ON	Off	Off	Enable 2.5V LDO, wait for 2.5V good
5	Off	ON	Off	ON	Enable 1.2V DC-DC, wait for 1.2V good
6	Off	ON	ON	Off	Waiting for Slide Pots R19 and R20 to be raised to the top of the Slide

Demo 2 – Test Slide Pots R19-R20 and LEDs D3-D6, D13-D14, D19-D20 and D21-D24

Demo 2 tests the position of the slide pots, and displays patterns and information on the LEDs and LCD display. The slide pots are connected to two VMON inputs of the Platform Manager and are set to be "good" at about 3V. The demo checks for both pots to be at good levels, then continues to the next step, which is to exercise various digital outputs from the Platform Manager. Platform Manager outputs connect to the LEDs, as shown in the tables below, and also to the LCD. The Closed Loop Trimming function for the LDO and DC-DC converter is also enabled at this point.

- Move Slide Pots R19-R20 to the top (board edge) of their travel.
  - LEDs D21-D24 will cycle on and off as shown in the table below.

Step	D24	D23	D22	D21
1	Off	ON	Off	ON
2	ON	Off	ON	Off
Back to Step 1				

  - LEDs D3-D6, D13, D15 and D19-D20 will blink on and off in a binary sequence, with D13 the MSB and D3 the LSB. The LCD will display "FF" in the right-most two digits.
  - The voltage across the two pins of J8 will measure 2.5V +/- 1%.
  - The voltage across the two pins of J7 will measure 1.2V +/- 1%.

Demo 3 – Test DIP Switches SW9-SW10

Demo 3 continues to exercise the digital inputs and outputs of the Platform Manager. Two of the DIP switches are connected to the digital inputs of the Platform Manager. As these DIP switches are turned on or off, the LCD will display two hexadecimal digits corresponding to the values produced by the four bits of each DIP switch.

- One by one, move DIP switches SW9-SW10 from the off/up position to the on/down position, and then back to the off/up position.
  - The LCD will display corresponding hexadecimal characters representing the hexadecimal value of each DIP switch as it is moved. The value will change for each switch setting, as shown in the table below. Other values may be created by depressing more than one switch at a time.

LCD Display	SW10-1	SW10-2	SW10-3	SW10-4	SW9-1	SW9-2	SW9-3	SW9-4
FE	Off	Off	Off	Off	Off	Off	Off	ON
Fd	Off	Off	Off	Off	Off	Off	ON	Off
Fb	Off	Off	Off	Off	Off	ON	Off	Off
F7	Off	Off	Off	Off	ON	Off	Off	Off
EF	Off	Off	Off	ON	Off	Off	Off	Off
dF	Off	Off	ON	Off	Off	Off	Off	Off
bF	Off	ON	Off	Off	Off	Off	Off	Off
7F	ON	Off	Off	Off	Off	Off	Off	Off

Demo 4 – Test All Segments of the LCD Display

Similar to Demo 3, Demo 4 also uses digital inputs. In this step, one of the push-buttons which is connected to a digital input causes the LCD controller to display a looping sequence of numbers from 111-FFF. This sequence repeats on the LCD as long as the push-button is depressed.

- Press and hold PB_B_SW2.
  - The LCD display will show a counting sequence from a blank display, through 111, 222, 333 … FFF, and will repeat. The count may start anywhere in the sequence.

Demo 5 – Test Two Push-buttons and Trimming/Margining

This demo shows the operation of the Closed Loop Trimming, and the ability of the Platform Manager to have different voltage profiles for margining which are selectable on the fly. There are three profiles used for this test. Profile 1 generates the target voltage (e.g., 1.2V) and adjusts the output voltage up by 5%. Profile 2 adjusts the output voltage down by 5%. Pressing either of the push-buttons shown below selects one of the profiles.

- Press and hold push-button PB_A_SW1.
  - The voltage across the two pins of J8 will measure approximately 2.625V.
  - The voltage across the two pins of J7 will measure approximately 1.26V.

- Release push-button PB_A_SW1.
- Press and hold push-button PB_B_SW2.
  - The voltage across the two pins of J8 will measure approximately 2.375V.
  - The voltage across the two pins of J7 will measure approximately 1.14V.

- Release push-button PB_B_SW2.

Demo 6 – Test Push-button S1 for Reset Function

Demo 6 illustrates the Platform Manager's ability to sequence through a power-down scenario, and in this case, restart the demo. When push-button S1 is depressed, the DC-DC converter is powered down, followed by the LDO. The sequencer then returns to the beginning of the demo and starts over.

- Move Slide Pots R19-R20 to the down position (center of the board). Press and release push-button S1.
  - The board will reset and the test will start over.

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Done!

Congratulations! You have successfully demonstrated the Platform Manager Development Kit. Please refer to the Platform Manager Development Kit User's Guide available on the Lattice web site at www.latticesemi.com/ptmdevkit for the following:

- Running advanced demos, including voltage monitoring, via I2C
- Details on additional development board features and operation
- Modifying and generating the demo program files from the PAC-Designer® project sources
- Board schematics
- Gerber PCB layout artwork

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