

Intel® PXA27x Processor Developer's Kit

Quick Start Guide

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1.0 Purpose and Overview

This document contains instructions for unpacking, setting up, and starting the Intel® PXA27x Processor Developer's Kit (kit) for Intel® Personal Internet Client Architecture.

1.1 Packing List

The kit includes the following items:

- Assembled kit, including:
  - Intel® PXA27x Processor Developer's Kit Main Board (main board)
  - Intel® PXA27x Processor Developer's Kit Daughter Card (daughter card)
  - Intel® PXA27x Processor Card (processor card) with a 520 MHz C0 stepping of Intel® PXA270 Processor (processor)
  - Intel® PXA27x Processor Developer's Kit Audio Module (audio module)
  - Intel® PXA27x Processor Developer's Kit PMIC (LDO) Card (PMIC card)
  - Chassis and transparent plastic cover
  - Hinged user-interface panel
- Intel® JTAG ribbon cable and parallel port cable
- 6-foot Cat-5 Ethernet cross-over cable, yellow
- 6-foot U.S. power cord
- 32-MB SD Card
- 104-key USB keyboard
- 9-pin null-modem cable
- QVGA LCD

To obtain Board Support Packages (BSPs) for Linux, Palm OS*, Symbian*, Microsoft Windows* Mobile* 2003 for Pocket PC*, or Microsoft Windows* Mobile* 2003 for Smartphone, see your Intel Application Engineer (AE). To obtain a BSP for Microsoft Windows CE .NET, please enroll in the Windows CE .NET beta program at https://www.beta.microsoft.com.

1.2 Applicable Documents and Processor Revisions

This section identifies the hardware and documentation applicable to the kit.

For additional reference documentation, see *Intel® PXA27x Processor Developer's Kit User's Guide*.

1.2.1 Hardware and Applicable Documents

The following table lists the hardware and documentation that apply to this release of the kit:

Table 1. Applicable Hardware and Documentation for Intel® PXA27x Processor Developer's Kit

Item	Document Number
Power-On-Self-Test (POST) for the Intel® PXA27x Processor Developer's Kit Release Notes[a]	278954
Board Bring Up (BBU) Program for the Intel® PXA270 Processor Developer's Kit Release Notes[a]	278955
Intel® PXA27x Processor Developer's Kit Main Board Specification Update	278956
Intel® PXA27x Processor Developer's Kit Daughter Card Specification Update	278957
Intel® PXA27x Developer's Kit PMIC (LDO) Card Specification Update	278959
Intel® PXA27x Processor Family Developer's Manual	280000
Intel® PXA27x Processor Developer's Kit User's Guide	278958
Intel® PXA27x Processor Developer's Kit Schematic	278951
Intel® PXA27x Processor Developer's Kit Parts List	278952

a. Documents shipped with the kit.

Note: To obtain some of these documents, contact your Application Engineer (AE).

1.3 Intel® PXA270 Processor Card Revisions

This revision of the kit supports stepping C0 of the Intel® PXA270 Processor (processor). The Power On Self Test (POST) application indicates the stepping of the processor card during the initial start of the program. For more information on POST, see Section 2.2.

1.4 Known Issues

See the *Intel® PXA27x Processor Developer's Kit Main Board Specification Update*, the *Intel® PXA27x Developer's Kit PMIC (LDO) Card Specification Update,* and the *Intel® PXA27x Processor Developer's Kit Daughter Card Specification Update,* for errata, specification changes, or documentation changes.

1.5 Inspection

After unpacking the kit, verify that you have all the items listed in Section 1.1. Inspect each item for visible damage. Other areas you must inspect include:

- Cable connectors, check to make sure that there are no bent or damaged pins.
- Standoffs, make sure they are tight.
- Standoff screws, make sure that they are snug.

If any item is damaged, return the item to Intel. If you need to return any items to Intel, please send an e-mail to: **PCAdevbdRMA@mailbox.intel.com** for an RMA request. Type "Board Issues" in the subject line of the e-mail.

2.0 Setting Up and Using the Kit

There are two general steps and one optional step you should follow when setting up and using your kit. These general steps are:

1. "Preparing the Kit"
2. "Testing the Kit"
3. (optionally) "Troubleshooting the Kit"

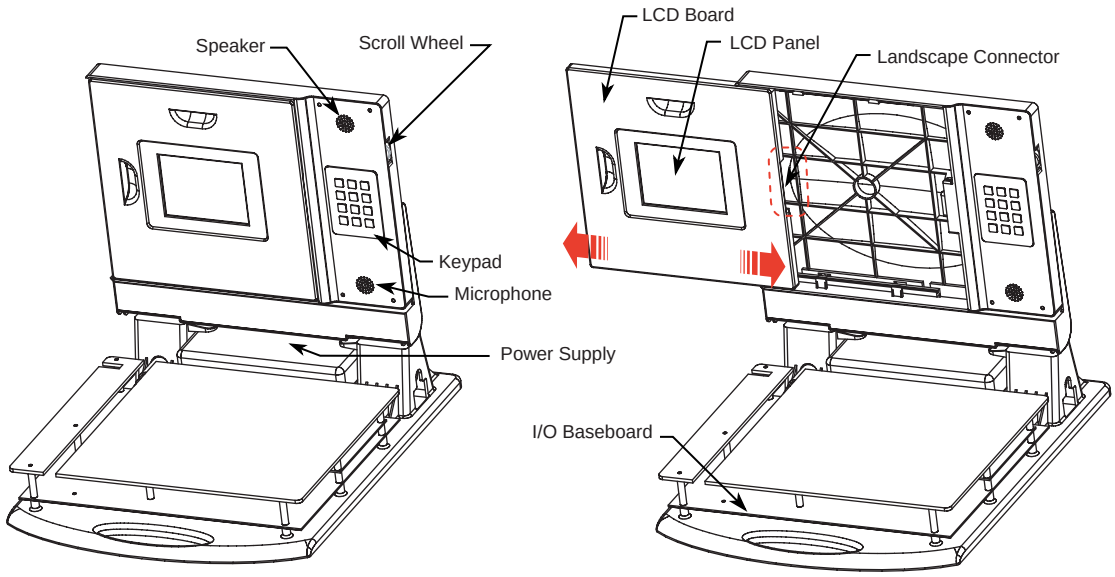
2.1 Preparing the Kit

Follow these steps to set up your kit:

1. Unfasten the two flexible tie straps, one on each side of the platform. (These straps secured the platform during shipment and storage.)
2. Raise the platform panel to a comfortable viewing and operating position.
3. Connect the AC power cord to the power supply; plug the power cord into a power outlet.

During setup and while starting kit, refer to the following Figure 1:

Figure 1. Intel® PXA27x Processor Developer's Kit Overview



2.2 Testing the Kit

For locations of the major hardware items, see Figure 1 and Figure 3.

2.2.1 Required Terminal Software and Settings

To use the kit, you need one of the terminal emulator programs listed below on your computer:

- HyperTerminal*
- Tera Term Pro*

Use a terminal emulator like HyperTerminal* or Tera Term Pro* as the primary I/O device for the Power On Self Test (POST). Create a terminal setup with the following characteristics:

Table 2. Terminal Setup Characteristics

Setting	Value
Baud Rate	115,200 baud
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None

2.2.2 Starting the Kit

To start the system, follow these steps:

1. Complete the instructions in Section 2.1, “Preparing the Kit”.
2. Connect the DB-9 Serial connection to the FFUART (J2) connection on the daughter card. This is the primary I/O for the POST software.
3. Turn on the kit system power by moving the main board power switch, SW23, to the ON position.

   The seven-segment Hex displays on the main board indicate a series of progress codes as the POST software runs.

After the POST completes (less than ten minutes) without errors, the terminal displays:
`00000000`

Note: The POST software displays a test image on the LCD panel. A "pass" or "fail" message from the POST indicates the internal setup status of the LCD controller. The user is required to observe that the test image has been displayed.

2.3 Troubleshooting the Kit

If the POST software does not displaying codes, **or** if the POST software displays a final code other than `00000000`, you may have errors or problems with the system. Some problems you can repair by:

- Setting switches back to their factory default settings
- Re-seating the daughter card.

To troubleshoot your kit:

1. Turn off the system power and unplug the power cord from the wall outlet.
2. Check all cables and cords to ensure that they are properly connected.
3. See “Default Switch Settings” on page 5-10 and adjust the setting as necessary.

3.0 Default Switch Settings

This section lists the default switch settings for both the daughter card and the main board.

3.1 Default Switch Settings for the Daughter Card

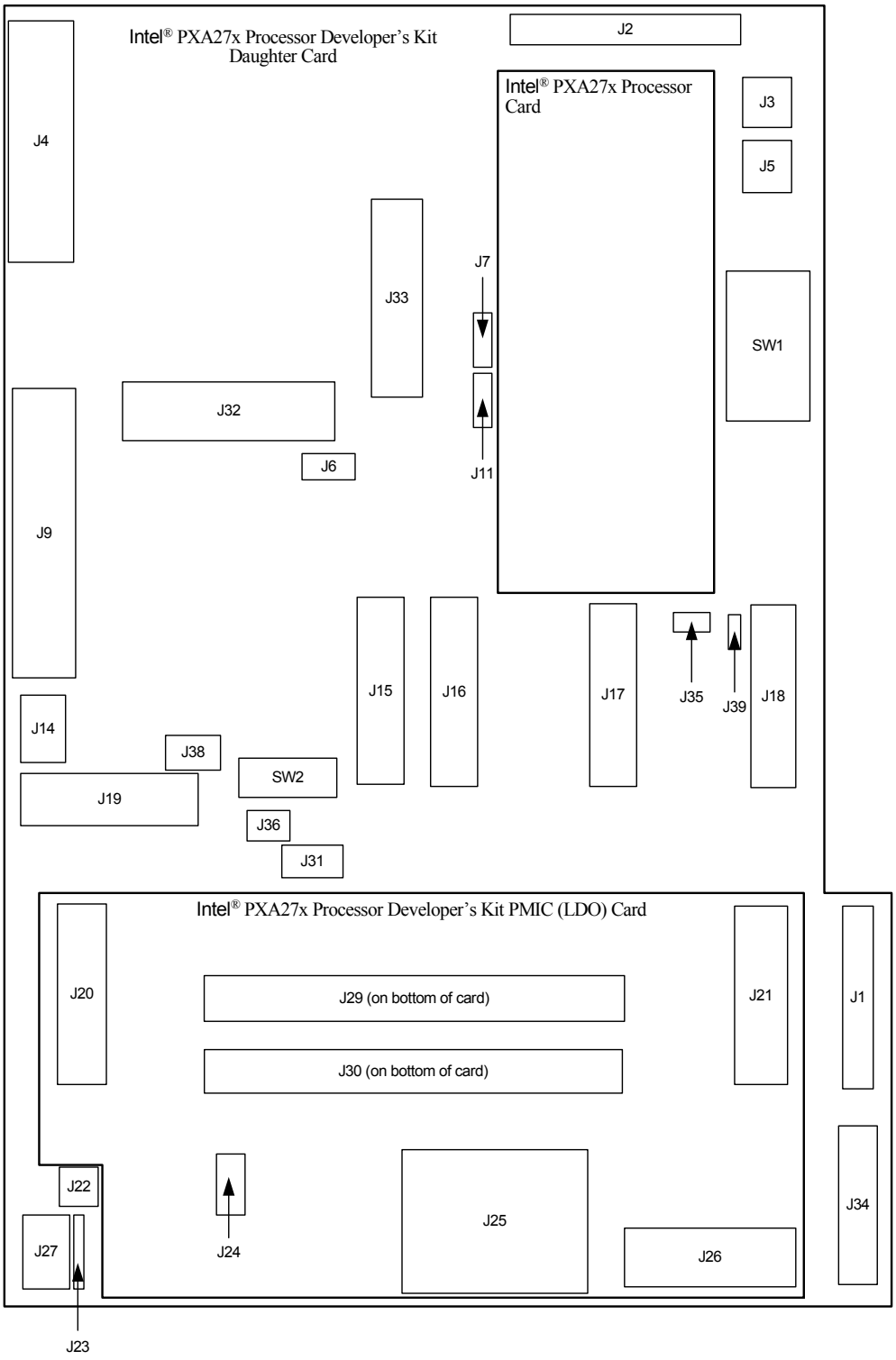
Table 3 indicates the default factory settings of the switches on the daughter card, and Figure 2 shows the switch locations.

Verify that all daughter card switches are set to their factory default settings.

Table 3. Intel® PXA27x Processor Developer's Kit Daughter Card Switch Settings

Switch	Factory Default Setting
SW1, Pins 1, 3, 5, 6 and 8	Up (ON)
SW1, Pins 2, 4, and 7	Down (OFF)
SW2, Pins 1 and 2	Down (ON)

Figure 2. Intel® PXA27x Processor Developer's Kit Daughter Card Switch Locations



3.2 Default Settings for the Main Board Switches

The switches (except for the Rotary Switches SW12 and SW13) on the main board are SPDT slide switches with two possible settings: DOT and NO DOT.

- **DOT** indicates the position in which a dot is visible.
- **NO DOT** indicates the position in which a dot is ***not*** visible.

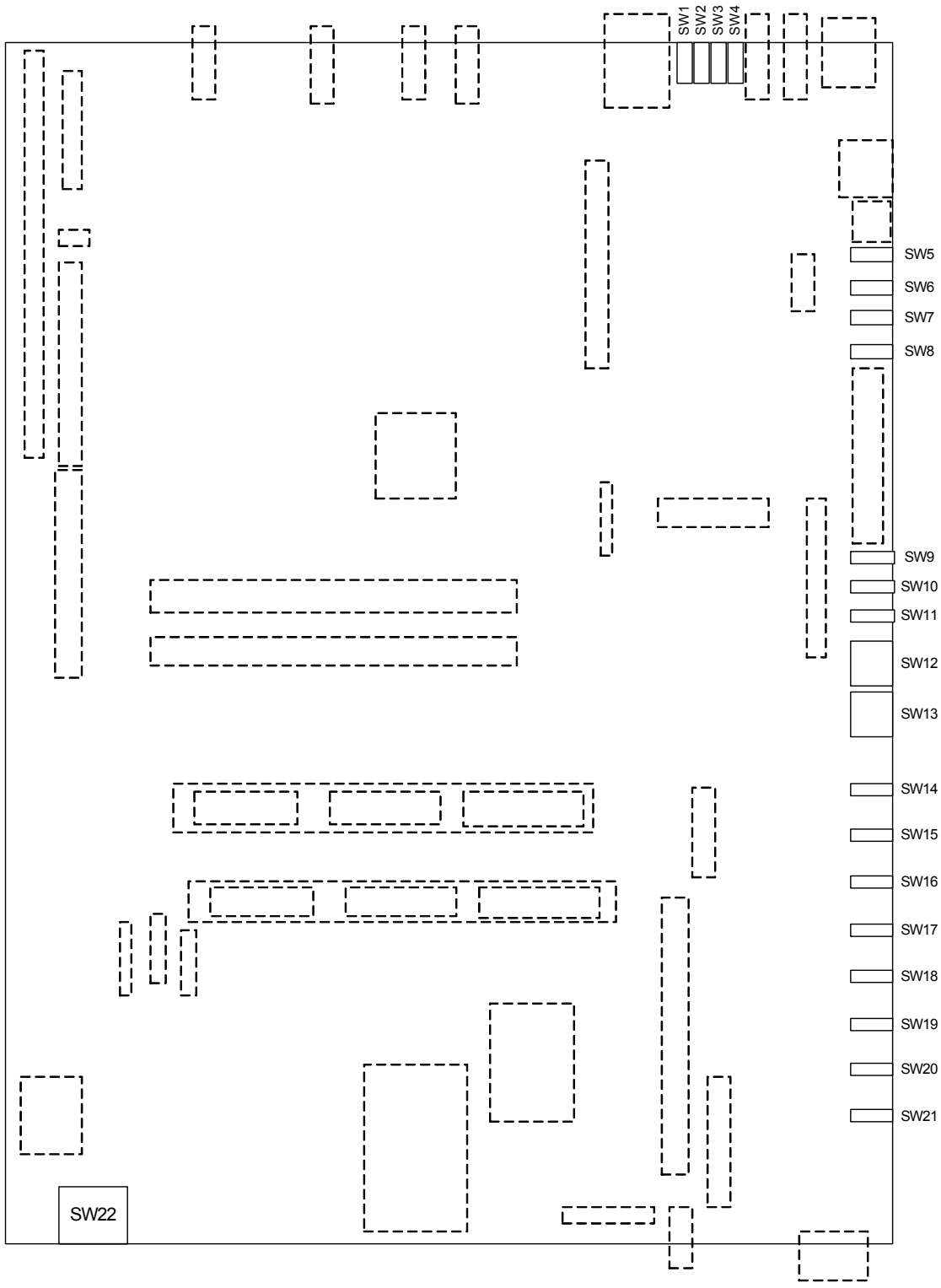
Table 4 shows the default factory settings for the switches on the main board.

Figure 3 shows the switch locations. Please verify that all switches are set to their factory defaults.

Table 4. Intel® PXA27x Processor Developer's Kit Main Board Default Switch Settings

Switch ID	Default Settings	Switch ID	Default Settings
SW1	DOT	Rotary SW12	**A**
SW2	DOT	Rotary SW13	**D**
SW3	DOT	SW14	NO DOT
SW4	DOT	SW15	NO DOT
SW5	DOT	SW16	NO DOT
SW6	DOT	SW17	DOT
SW7	DOT	SW18	DOT
SW8	DOT	SW19	DOT
SW09	DOT	SW20	DOT
SW10	DOT	SW21	DOT
SW11	DOT		

Figure 3. Intel® PXA27x Processor Developer's Kit Main Board Switch Locations



3.3 PMIC Card Switch Settings

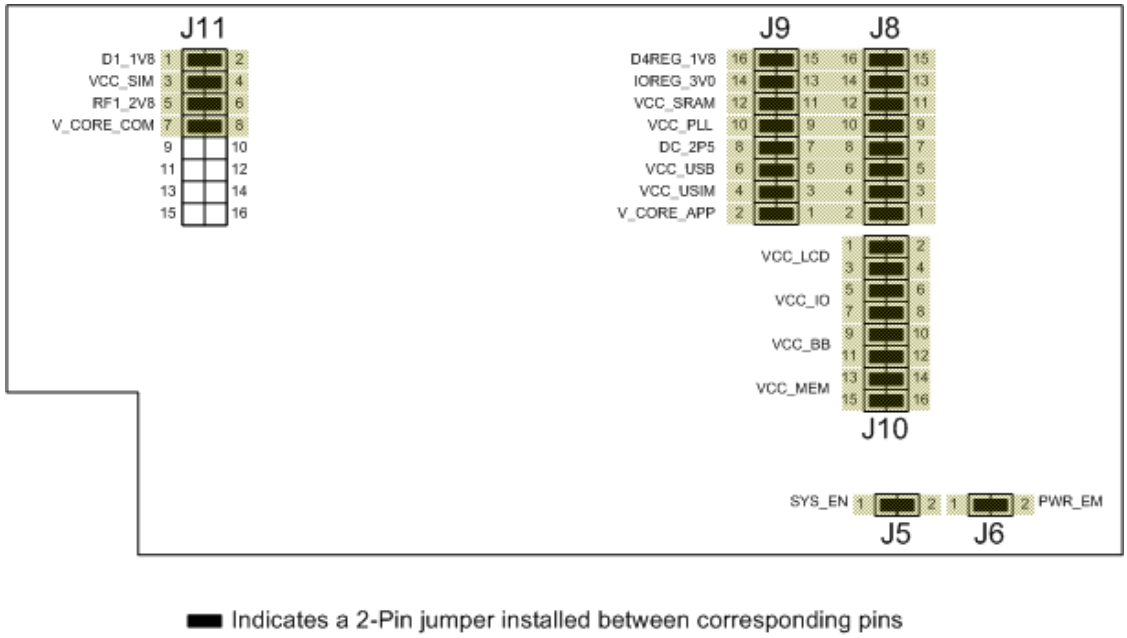
For the PMIC card, SW4 is comprised of 5 subswitches. The defaults for these switches are as follows:

Subswitch	Default
1	On
2	On
3	On
4	On
5	On

On the PMIC card revision 1.2, the following headers have 0.1 Ohm resistor, in parallel to every 2-pin header: J9, J10, J11. Header J8 has no parallel resistors.

ALL 100Mil headers, except for J11(16-15, 14-13, 12-11, 9-10), must have 2-pin jumpers installed between corresponding pins as illustrated below:

Figure 4. PMIC Power Measurement Headers (Factory Default Settings)



3.4 Repeating Troubleshooting Procedures

If the POST software does not start or cannot complete without errors, repeat the procedures in Section 3.2 several times.

If the POST software indicates that problems persist, return the kit to Intel Corporation (see Section 1.5).

4.0 Operating the Kit

Refer to the *Intel® PXA27x Processor Developer's Kit User's Guide* for operating instructions.

For information on processor programming, please see *Intel® PXA27x Processor Family Developer's Manual*.

5.0 Removing and Installing the Daughter Card

Caution: Always wear a grounded wrist strap when handling any of the cards. When a card is removed from the system, store it in an anti-static package. Do *not* touch any part of the card except the edges.

5.1 Removing the Daughter Card

To remove the daughter card from the main board you must first remove the daughter card. To remove the PMIC card and the daughter card, follow these steps:

1. Orient the system with the hex displays at bottom left (normal operational view).
2. Remove the two standoffs that hold the PMIC card in place.
3. Gently remove and set aside the PMIC card.
4. Remove the three standoffs that hold the daughter card in place.
5. In the top, right hand corner of the daughter card, remove the lone screw holding the board in place.
6. Gently remove the daughter card by pulling up at the edges.

5.2 Installing the Daughter Card

When installing the daughter card, you must finish off the process by also installing the PMIC card. Follow these steps to install the daughter card:

1. Orient the system with the hex displays at bottom left (normal operational view).
2. Align the connectors J27 and J28 on the bottom of the card with their receptacles on the main board.
3. Let the daughter card slip into its receptacles. When correctly positioned, it will not be free to move in the horizontal plane.
4. Insert and tighten the screw in the top, right hand corner of the daughter card to fasten the daughter card to the main board.
5. Fasten the 3 standoffs that hold the daughter card to the main board.
6. Position the PMIC card over the connector on the daughter card, then gently press down on the PMIC card. Be very careful pressing down on the PMIC card so as not to damage the card during installation.
7. Fasten the PMIC card to the daughter card with the 2 standoffs.