Xilinx Personality Module (XPM) Interface Specification

For RocketIO MGT and LVDS Access

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Revision History

The following table shows the revision history for this document.

Date	Version	Revision
09/28/04	1.0	Initial Xilinx release.
10/04/04	1.0.1	Minor non-technical edits. Corrected TOC.
01/14/05	1.0.2	Corrected typos in Table 2-6, page 22.
04/26/06	1.1	Minor edits throughout. Updated Table 2-5, page 19 and Table 2-6, page 22.

Table of Contents

About This Guide

This document provides the specifications for designing customized personality modules for Xilinx Embedded Development Platforms that are equipped with personality module interface connectors.

Guide Contents

This manual contains the following chapters:

- Section 1, "Introduction," provides an overview of the host board and the personality module as adapter board
- Section 2, "Signal Definitions," defines the signals of the XPM connectors
- Section 3, "Mechanical Specification," shows the dimensions for personality modules and the XPM connectors

Additional Resources

For additional information, go to http://www.xilinx.com/support/. The following table lists some of the resources you can access from this website. You can also directly access these resources using the provided URLs.

Resource	Description/URL
Tutorials	Tutorials covering Xilinx design flows, from design entry to verification and debugging http://www.xilinx.com/support/techsup/tutorials/index.htm
Answer Browser	Database of Xilinx solution records http://www.xilinx.com/xlnx/xil_ans_browser.jsp
Application Notes	Descriptions of device-specific design techniques and approaches http://www.xilinx.com/xlnx/xweb/xil_publications_index.jsp?category=Application+Notes
Data Sheets	Device-specific information on Xilinx device characteristics, including readback, boundary scan, configuration, length count, and debugging http://www.xilinx.com/xlnx/xweb/xil_publications_index.jsp

Resource	Description/URL
Problem Solvers	Interactive tools that allow you to troubleshoot your design issues http://www.xilinx.com/support/troubleshoot/psolvers.htm
Tech Tips	Latest news, design tips, and patch information for the Xilinx design environment http://www.xilinx.com/xlnx/xil_tt_home.jsp

Conventions

This document uses the following conventions. An example illustrates each convention.

Typographical

The following typographical conventions are used in this document:

Convention	Meaning or Use	Example
`Courier font`	Messages, prompts, and program files that the system displays	`speed grade: - 100`
`Courier bold`	Literal commands that you enter in a syntactical statement	**`ngdbuild`** *`design_name`*
Helvetica bold	Commands that you select from a menu	**File → Open**
	Keyboard shortcuts	**Ctrl+C**
Italic font	Variables in a syntax statement for which you must supply values	**`ngdbuild`** *`design_name`*
	References to other manuals	See the *Development System Reference Guide* for more information.
	Emphasis in text	If a wire is drawn so that it overlaps the pin of a symbol, the two nets are *not* connected.
Square brackets [ ]	An optional entry or parameter. However, in bus specifications, such as **`bus[7:0]`**, they are required.	**`ngdbuild`** `[`*`option_name`*`]` *`design_name`*
Braces { }	A list of items from which you must choose one or more	**`lowpwr =`**`{`**`on`**`|`**`off`**`}`
Vertical bar |	Separates items in a list of choices	**`lowpwr =`**`{`**`on`**`|`**`off`**`}`

Convention	Meaning or Use	Example

Vertical ellipsis
.
.
.
	Repetitive material that has been omitted	`IOB #1: Name = QOUT'`
		`IOB #2: Name = CLKIN'`
		.
		.
		.

Horizontal ellipsis ...	Repetitive material that has been omitted	**`allow block`** *`block_name loc1 loc2 ... locn;`*

Online Document

The following conventions are used in this document:

Convention	Meaning or Use	Example
Blue text	Cross-reference link to a location in the current document	See the section "Additional Resources" for details. Refer to "Title Formats" in Chapter 1 for details.
Red text	Cross-reference link to a location in another document	See Figure 2-5 in the *Virtex-II Handbook*.
Blue, underlined text	Hyperlink to a website (URL)	Go to http://www.xilinx.com for the latest speed files.

1 Introduction

1.1 Overview

Xilinx Personality Module (XPM) interface connectors provide users with access to the high-speed LVDS and RocketIO transceiver pins on Xilinx embedded development boards, thereby extending the functionality of these boards. This document defines the XPM interface connector signals and mechanical specifications for an add-on personality module.

Figure 1-1 is an example of a personality module connected to an ML310 Embedded Development Platform (the host board) through the XPM connectors. The plug is referred to as the *host board connector*. The receptacle, located on the personality module, is referred to as the *adapter board connector*.

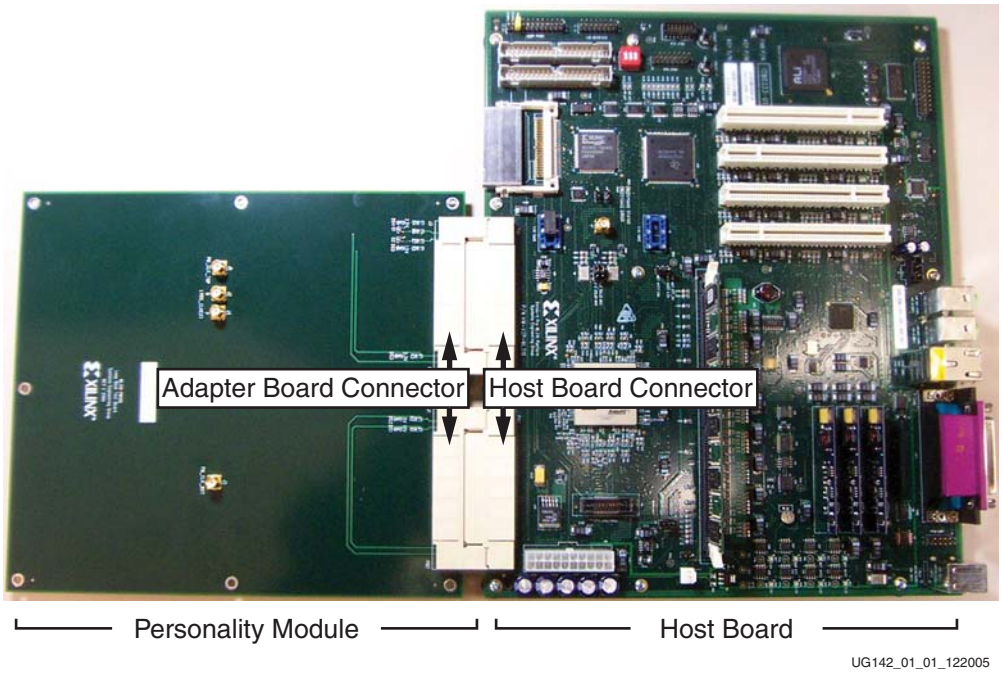

Figure 1-1: **Personality Module Connected to an Embedded Development Platform**

1.2 Z-Dok Personality Module Connectors

Figure 1-2 shows a close-up view of the two XPM connectors on an ML310 host board.

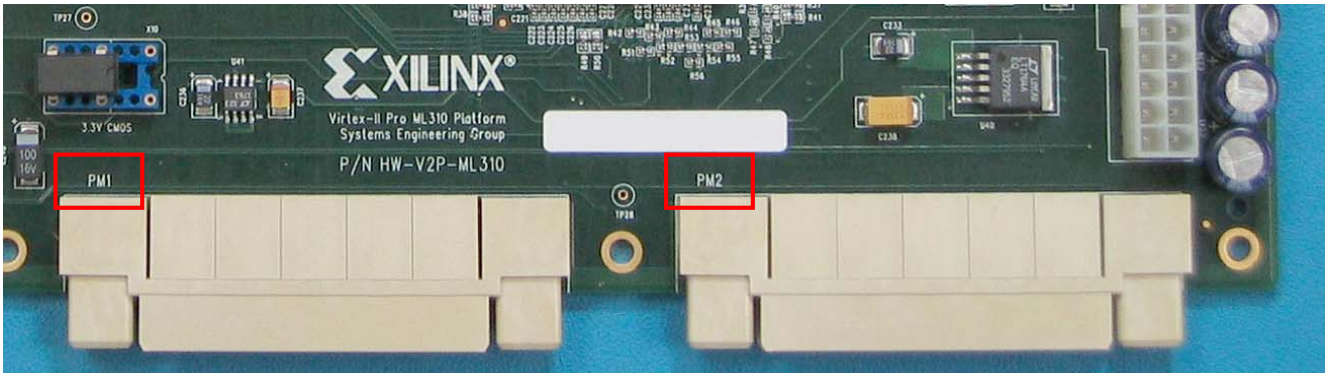

Figure 1-2: **XPM Connectors on the ML310 Board (Detail)**

The connectors are Tyco Z-Dok+ docking connectors, similar to the Z-Dok plug and receptacle illustrated in Figure 1-3. In addition to having the differential pairs and shielding ground connections of Z-Dok connectors, Z-Dok+ connectors include added utility connections for power, ground, and sensing. Tyco Z-Dok+ high-speed connectors are rated to 6.25 Gb/s.

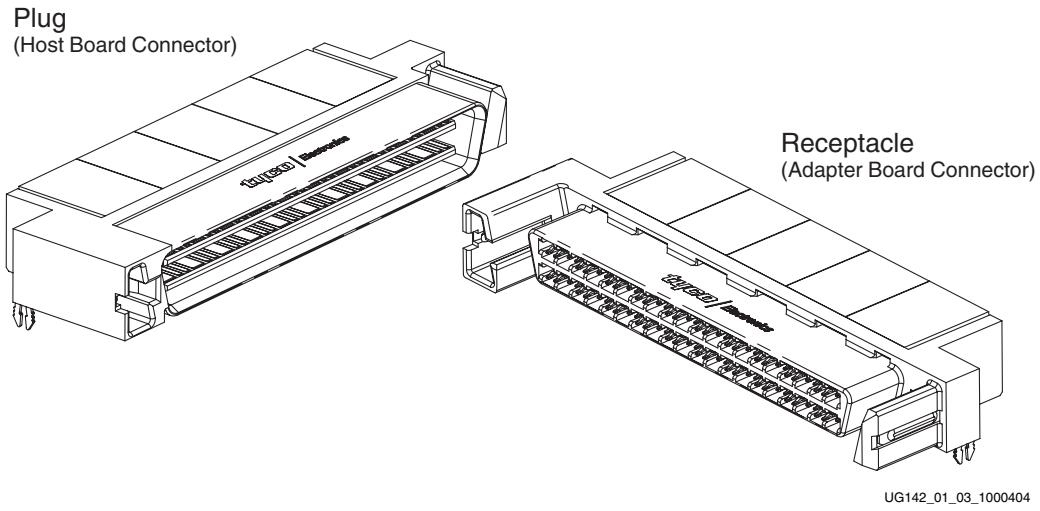

Figure 1-3: **Z-Dok Connector, Plug and Receptacle Detail**

Figure 1-4 is a detailed drawing showing the pin numbering for the Z-Dok+ connector. Zoom in for greater detail.

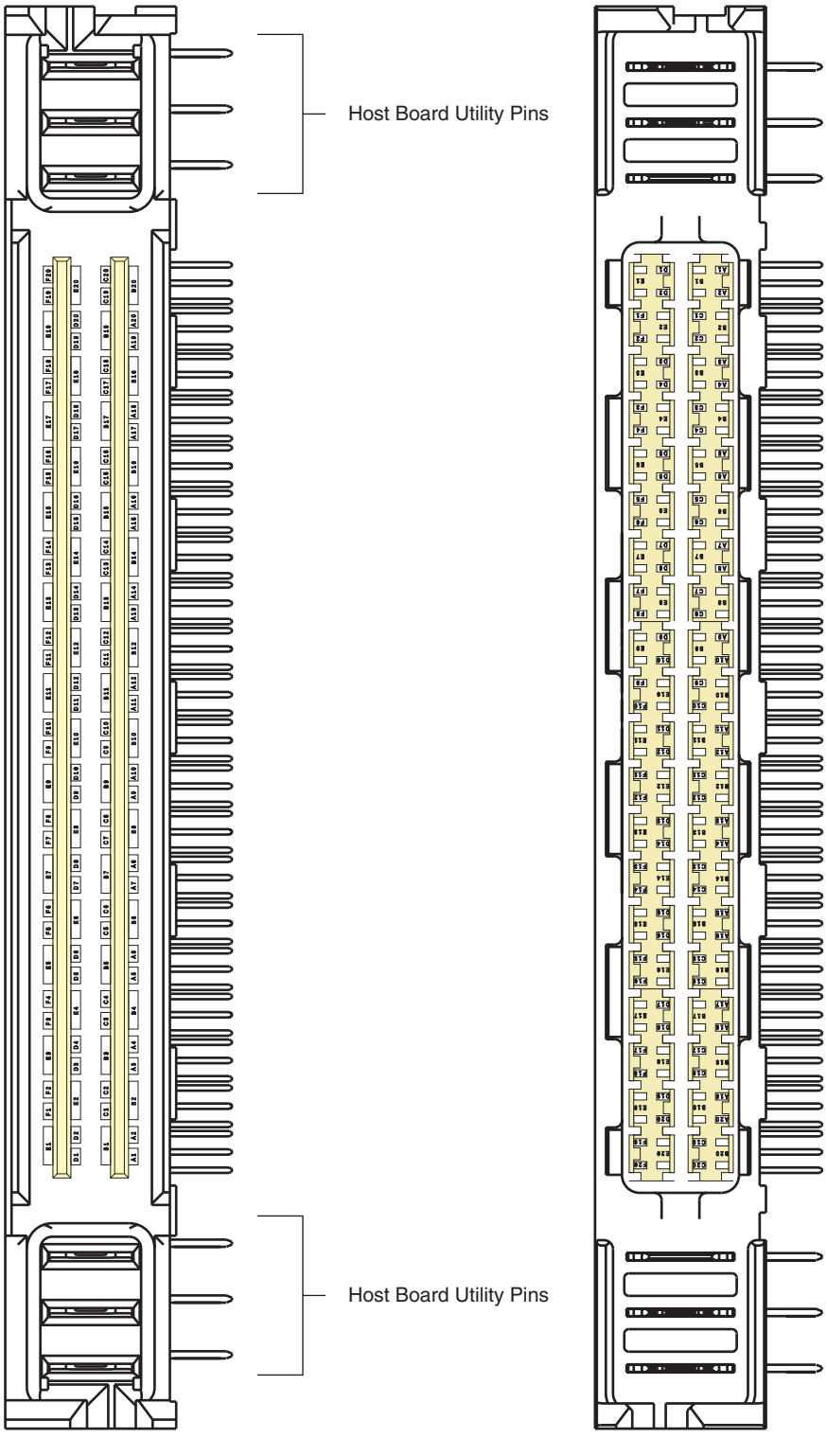

Figure 1-4: **Z-Dok+ Connector Pin Numbering**

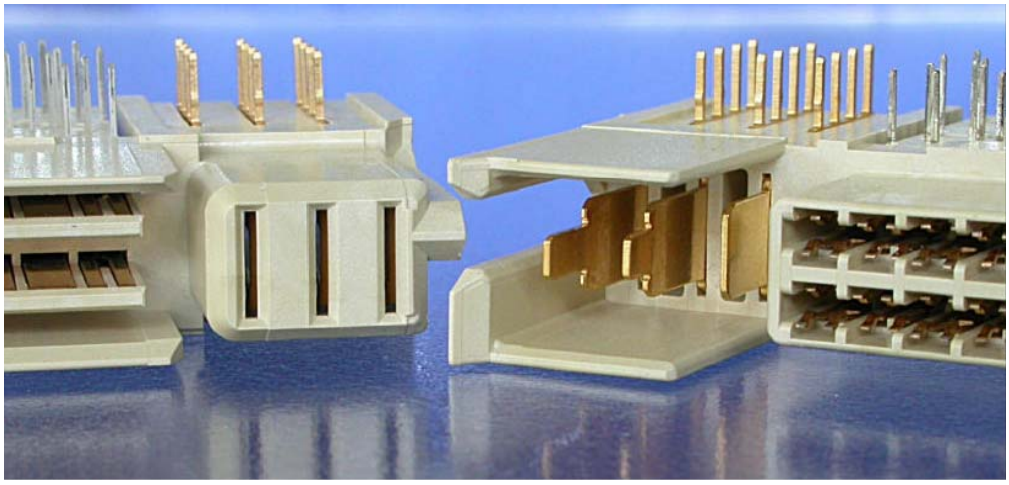

Figure 1-5: **Utility Pin (Detail)**

1.3 Host Board Connectors

Figure 1-6 is a mechanical drawing of the host board connector.

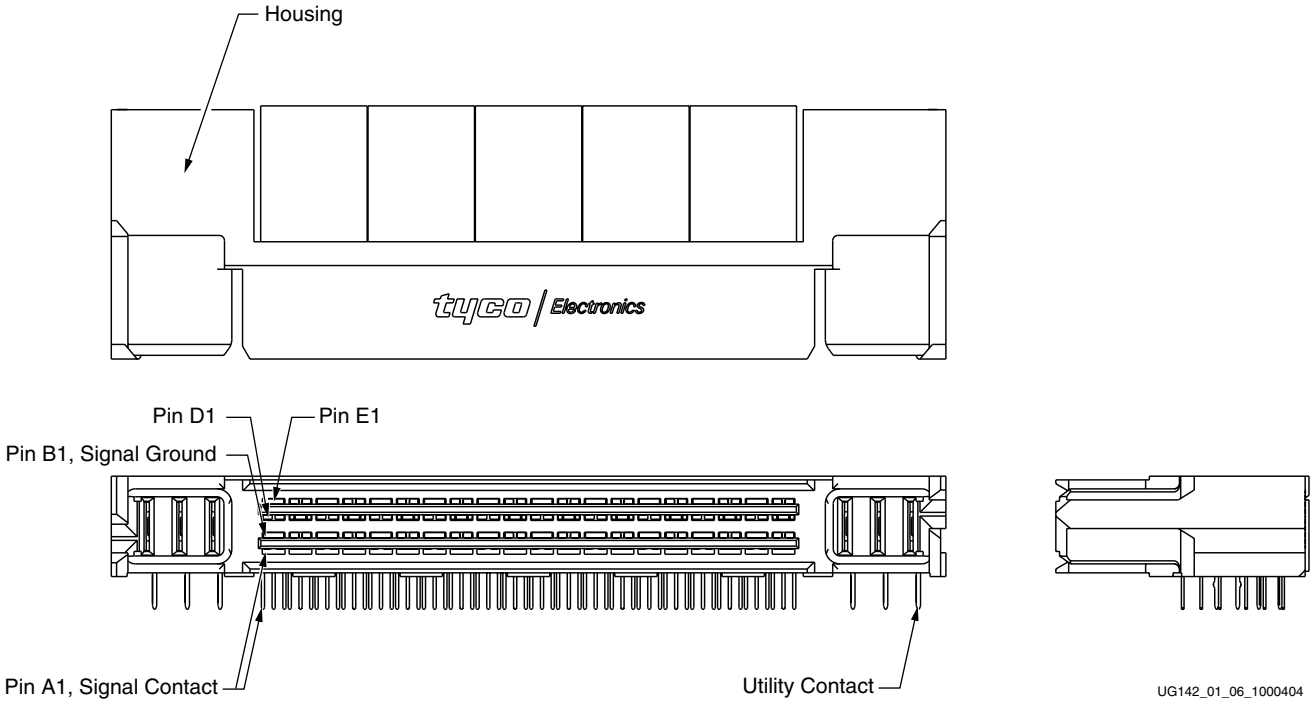

Figure 1-6: **Z-Dok+ Host Board Connector, Mechanical Drawing**

Each host board is equipped with two XPM connectors. Each connector has 40 differential pairs and several power and ground pins. Together, the two XPM connectors support 158 high-speed I/O pins that can be user defined. The XPM signals include:

- 8 RocketIO MGT pairs (32 pins total)
- 42 LVDS pairs (can be used as 84 single-ended I/O at 2.5V)
- 1 LVDS clock pair
- 38 single-ended I/O
  - 12 at 2.5V
  - 26 at 3.3V
- 2 single-ended 2.5V clocks
- 2 pins not connected

For details on Z-Dok+ host board connectors, see the 1367550-5 data sheet at Tyco's website (www.z-dok.com). For host board connector pinouts, see the user guide for the specific Xilinx embedded development platform you are using.

1.3.0.1 Connector 1

Connector 1 on the host board provides the following signals:

- 8 RocketIO 3.125 Gb/s MGTs
- 3 LVDS pairs at 2.5V (can be used as 6 single-ended I/O at 2.5V)
- 1 LVDS clock pair at 2.5V
- 12 single- ended I/O at 2.5V
- 26 single-ended I/O at 3.3V
- 1 single-ended clock at 2.5V

Note: One pin not connected

1.3.0.2 Connector 2

Connector 2 on the host board provides the following signals:

- 39 LVDS pairs at 2.5V (can be used as 78 single-ended I/O at 2.5V)
- 1 single-ended clock at 2.5V

Note: One pin not connected

1.4 Adapter Board Connectors

Figure 1-7 is a mechanical drawing of the Z-Dok+ adapter board connector. For details on the adapter board connectors, see the 1367555-1 data sheet at Tyco's website (www.z-dok.com).

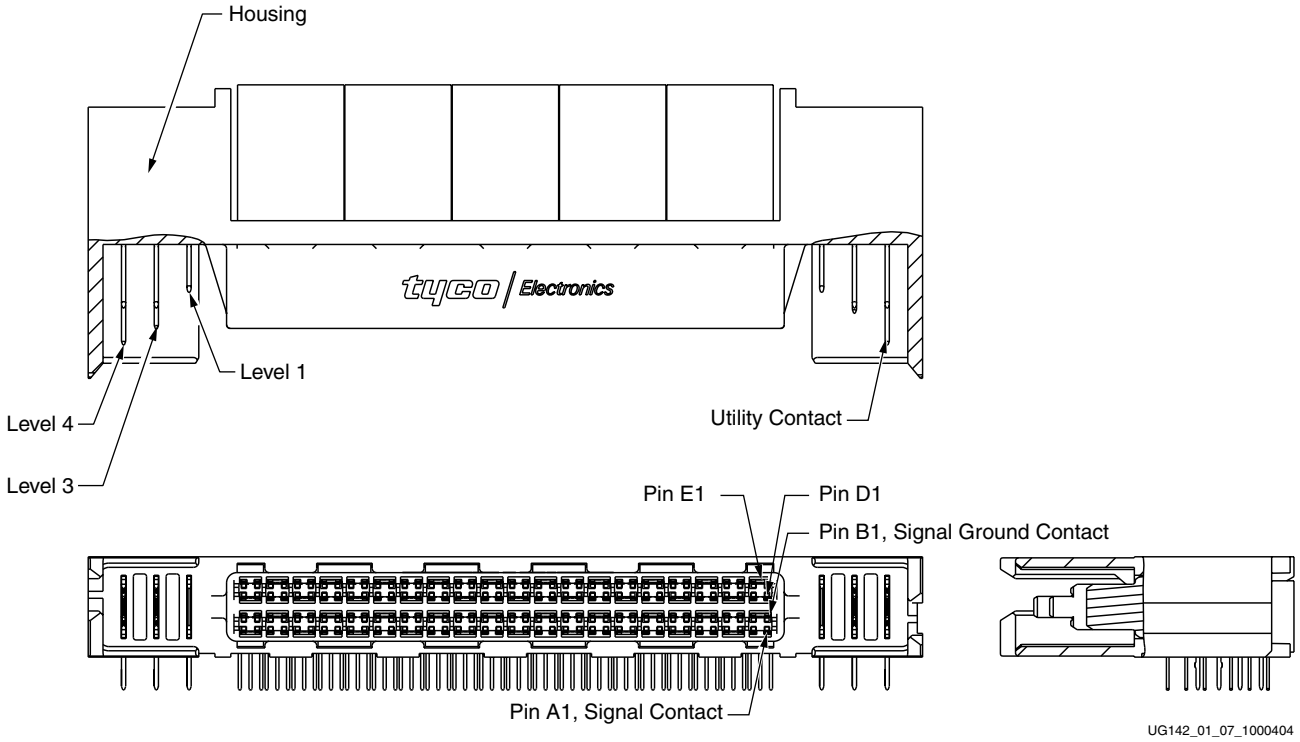

Figure 1-7: **Z-Dok+ Adapter Board Connector, Mechanical Drawing**

1.5 Related Documents

Visit the Xilinx website for documentation specific to the target FPGA family.

- For information on printed-circuit board (PCB) layout, refer to the RocketIO user guide
- For information on electrical characteristics, refer to the device data sheet
- For information on signal integrity, see the Xcell Journal online: http://www.xilinx.com/publications/xcellonline/xc_si49.htm
- For information and documentation on Xilinx Embedded Development Platforms, see http://www.xilinx.com/xob

2 Signal Definitions

2.1 Z-Dok+ Connector Pin Overview

2.1.1 Host Board Connector

Figure 2-1 shows an edge view of the host board connectors on an ML310 board.

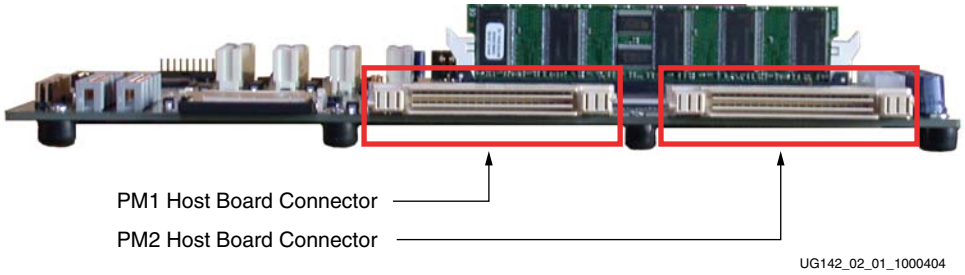

Figure 2-1: **Edge View of Host Board Connectors**

Each signal pair on the host board connectors has a wide ground pin on the opposite side of the plastic divider, as shown in Figure 2-2. The signal pairs alternate from side to side along the length of the divider. All of the B and E pins are grounded on the ML310. The A, C, D, and F pins are signal pins.

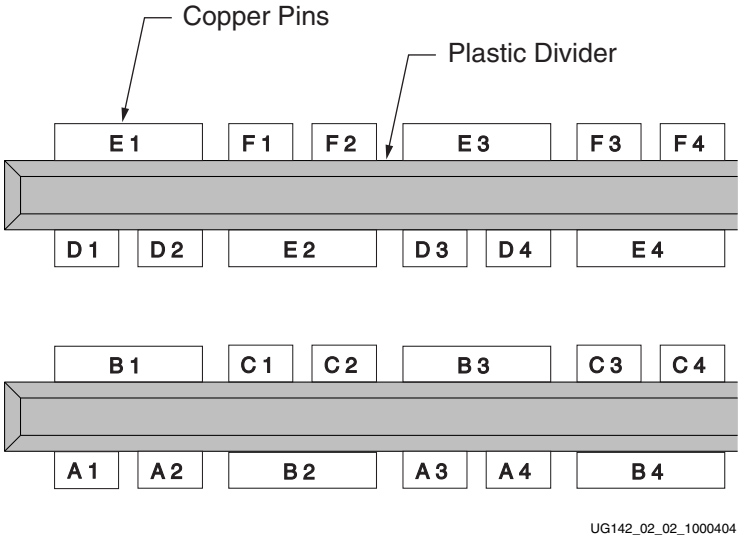

Figure 2-2: **Host Board Connector Pin Detail**

2.1.1.1 Z-Dok+ Connector Offsets

The Z-Dok+ connectors used on the embedded development platforms provide four rows of signals pairs. Each row has a particular propagation delay through a mated pair of connectors as shown in Table 2-1.

Table 2-1: **Delay Offsets**

ZDOK+ Connector	Connector Propagation Delay(1)	Physical Length
Row A	145.2 ps	830 mils
Row C	196.8 ps	1125 mils
Row D	213.3 ps	1219 mils
Row F	264.8 ps	1513 mils

Notes:

1. Propagation delay, i.e., the delay when traversing through the host board connector and the adapter board connector, was calculated assuming 175 ps/inch. Propagation delay is the total between each male and female connector pair.

All signals with length matching requirements, MGT and LVDS pairs, must include an offset to account for the Z-Dok+ propagation delays. Xilinx embedded development platforms account for one-half of the offset, while a user-designed adapter board must account for the other half. The relative offsets for the ML310 host board PM connector are included in Table 2-2. Users are required to compensate for these offsets when designing adapter boards.

Table 2-2: **Relative Offsets from the FPGA to the PM1 and PM2 Connectors**

ZDOK+ Connector	Difference	Offset	Offset/2
Row A	F-A = 1513 - 830	683	342
Row C	F-C = 1513 - 1125	389	194
Row D	F-D = 1513 - 1219	294	147
Row F	F-F = 0 - 0	0	0

Notes:

1. All offsets are normalized to row F. Xilinx host boards are designed based on the data in the **Offset/2** column.

2.1.2 Adapter Board

On the adapter board connectors, located on the personality module, each signal pair has a pair of ground pins on the opposite side of the open space, as shown in Figure 2-3. The signal pairs alternate from side to side along the length of the open space. All of the B and E pins are two contacts tied together and grounded on the personality module. The A, C, D, and F pins are signal pins.

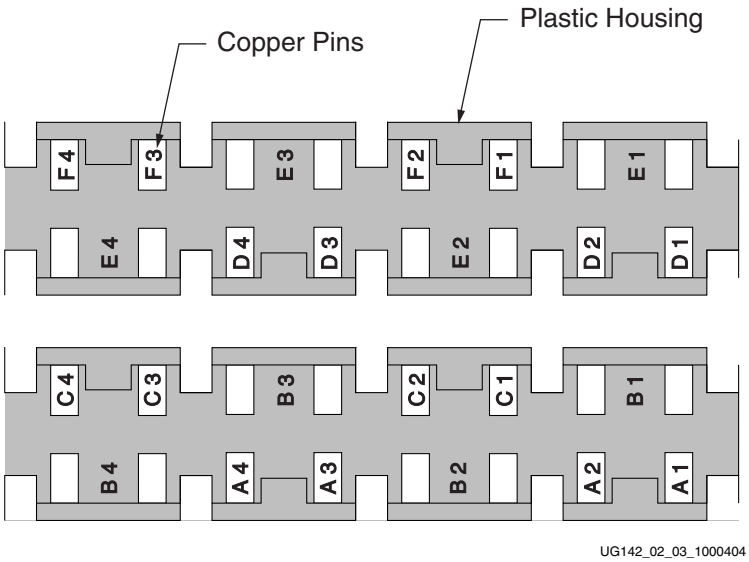

Figure 2-3: **Adapter Board Connector Pin Detail**

2.2 Z-DOK+ Utility Pins

Figure 2-4 shows the Z-DOK+ utility pins and numbering for the host board connector.

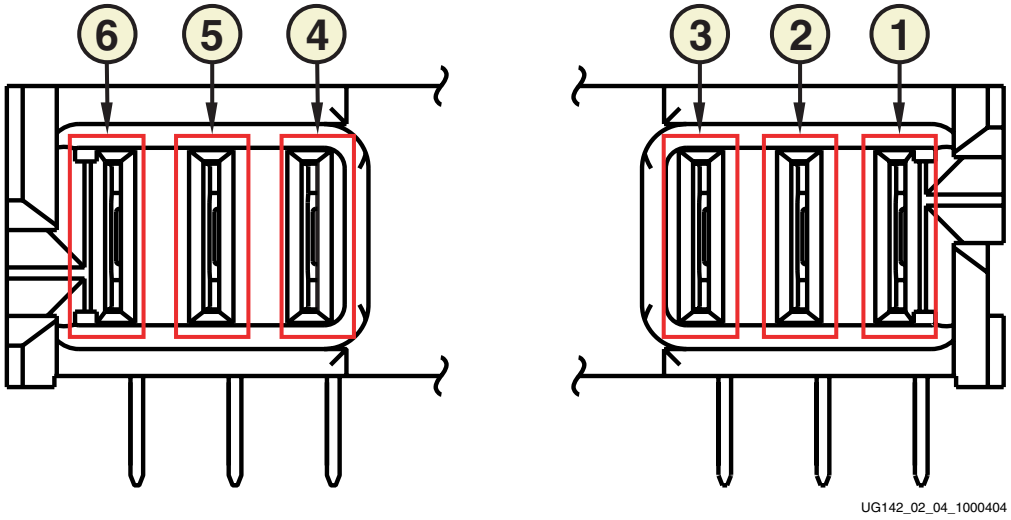

Figure 2-4: **Z-DOK+ Utility Pins (Host Board Side)**

Figure 2-5 shows the Z-DOK+ utility pins and numbering for the adapter board connector.

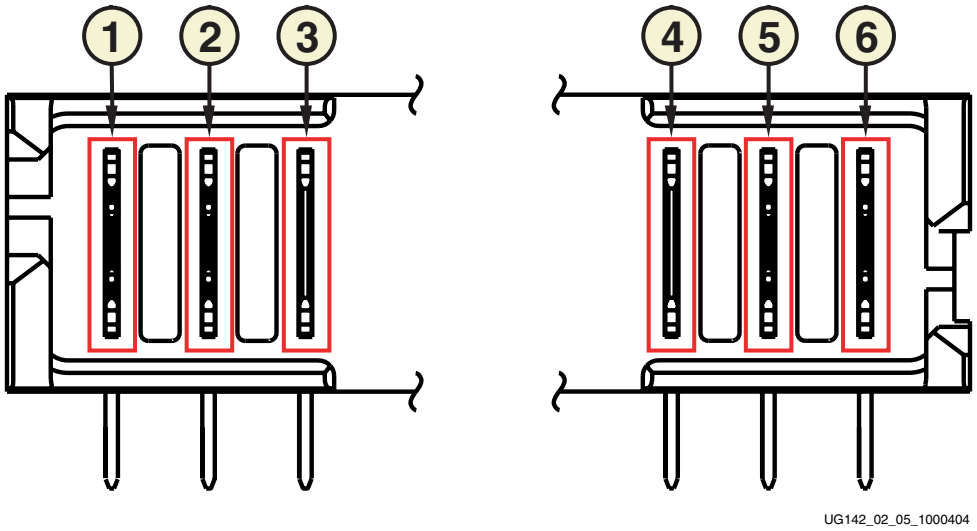

Figure 2-5: **Z-DOK+ Utility Pins (Adapter Side)**

Note: The pins on the adapter board connector are at varying heights, as shown in Table 2-3 and Table 2-4.

2.2.1 Contact Order

The Z-Dok+ power and ground pins contact in the following order:

- 1 and 6;
- then 2 and 5;
- then 3 and 4

2.2.2 PM1 Power and Ground

Table 2-3 shows the power and ground pins for the PM1 host board connector.

Table 2-3: **PM1 Power and Ground Pins**

Pin Number	Description	Length	Contact Order
1, 6	Ground	Level 4	First
2, 5	2.5V	Level 3	Second
3	3.3V	Level 2	Third
4	FPGA Core Voltage(1)	Level 2	Third

Notes:

1. Pin 4 provides access to the host board FPGA core voltage. To maintain compatibility across different host boards, treat this pin as a no connect when designing personality modules. To ascertain the core voltage value of a specific board, refer to the applicable host board's documentation.

2.2.3 PM2 Power and Ground

Table 2-4 shows the power and ground pins for the PM2 host board connector.

Table 2-4: **PM2 Power and Ground Pins**

Pin Number	Description	Length	Contact Order
1, 6	Ground	Level 4	First
2, 5	5V	Level 3	Second
3, 4	12V	Level 2	Third

2.3 Host Board User I/O Pins

2.3.1 PM1 User I/O

The PM1 connector makes the MGT signals from the eight RocketIO transceivers available to the user, along with LVDS pairs and single-ended signals. Table 2-5 shows the pinout for the PM1 connector.

Table 2-5: **PM1 Pinout**

PM1 Pin	Pin Description	FPGA Bank V_{CCO}	Pin Function
A1	IO_PM1_A1	2.5V	Single-ended 50Ω impedance
A2	IO_PM1_A2	2.5V	Single-ended 50Ω impedance
A3	IO_PM1_A3	2.5V	Single-ended 50Ω impedance
A4	IO_PM1_A4	2.5V	Single-ended 50Ω impedance
A5	IO_PM1_A5	3V	Single-ended 50Ω impedance
A6	IO_PM1_A6	3V	Single-ended 50Ω impedance
A7	IO_PM1_A7	3V	Single-ended 50Ω impedance
A8	IO_PM1_A8	3V	Single-ended 50Ω impedance
A9	IO_PM1_A9	3V	Single-ended 50Ω impedance
A10	IO_PM1_A10	3V	Single-ended 50Ω impedance
A11	IO_PM1_A11_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
A12	IO_PM1_A12_N	2.5V	
A13	RX_PM1_A13_P		MGT RX pair received by host FPGA
A14	RX_PM1_A14_N		
A15	RX_PM1_A15_P		MGT RX pair received by host FPGA
A16	RX_PM1_A16_N		
A17	TX_PM1_A17_P		MGT TX pair driven by host FPGA
A18	TX_PM1_A18_N		

Table 2-5: **PM1 Pinout *(Continued)***

PM1 Pin	Pin Description	FPGA Bank V_{CCO}	Pin Function
A19	TX_PM1_A19_P		MGT TX pair driven by host FPGA
A20	TX_PM1_A20_N		
C1	IO_PM1_C1	2.5V	Single-ended 50Ω impedance
C2	IO_PM1_C2	2.5V	Single-ended 50Ω impedance
C3	IO_PM1_C3	3V	Single-ended 50Ω impedance
C4	IO_PM1_C4	3V	Single-ended 50Ω impedance
C5	IO_PM1_C5	3V	Single-ended 50Ω impedance
C6	IO_PM1_C6	3V	Single-ended 50Ω impedance
C7	IO_PM1_C7	3V	Single-ended 50Ω impedance
C8	IO_PM1_C8	3V	Single-ended 50Ω impedance
C9	IO_PM1_C9_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
C10	IO_PM1_C10_N	2.5V	
C11	IO_PM1_C11	3V	Single-ended 50Ω impedance
C12	IO_PM1_C12	3V	Single-ended 50Ω impedance
C13	RX_PM1_C13_P		MGT RX pair received by host FPGA
C14	RX_PM1_C14_N		
C15	RX_PM1_C15_P		MGT RX pair received by host FPGA
C16	RX_PM1_C16_N		
C17	TX_PM1_C17_P		MGT TX pair driven by host FPGA
C18	TX_PM1_C18_N		
C19	TX_PM1_C19_P		MGT TX pair driven by host FPGA
C20	TX_PM1_C20_N		
D1	IO_PM1_D1	2.5V	Single-ended 50Ω impedance
D2	IO_PM1_D2	2.5V	Single-ended 50Ω impedance
D3	IO_PM1_D3	2.5V	Single-ended 50Ω impedance
D4	IO_PM1_D4	2.5V	Single-ended 50Ω impedance
D5	IO_PM1_D5	3V	Single-ended 50Ω impedance
D6	IO_PM1_D6	3V	Single-ended 50Ω impedance
D7	IO_PM1_D7	3V	Single-ended 50Ω impedance
D8	IO_PM1_D8	3V	Single-ended 50Ω impedance
D9	IO_PM1_D9	3V	Single-ended 50Ω impedance

Table 2-5: **PM1 Pinout *(Continued)***

PM1 Pin	Pin Description	FPGA Bank V_{CCO}	Pin Function
D10	IO_PM1_D10	3V	Single-ended 50Ω impedance
D11	IO_PM1_D11_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
D12	IO_PM1_D12_N	2.5V	
D13	TX_PM1_D13_N		MGT TX pair driven by host FPGA
D14	TX_PM1_D14_P		
D15	TX_PM1_D15_N		MGT TX pair driven by host FPGA
D16	TX_PM1_D16_P		
D17	RX_PM1_D17_N		MGT RX pair received by host FPGA
D18	RX_PM1_D18_P		
D19	RX_PM1_D19_N		MGT RX pair received by host FPGA
D20	RX_PM1_D20_P		
F1	IO_PM1_F1	2.5V	Single-ended 50Ω impedance
F2	IO_PM1_F2	2.5V	Single-ended 50Ω impedance
F3	IO_PM1_F3	3V	Single-ended 50Ω impedance
F4	IO_PM1_F4	3V	Single-ended 50Ω impedance
F5	IO_PM1_F5	3V	Single-ended 50Ω impedance
F6	IO_PM1_F6	3V	Single-ended 50Ω impedance
F7	IO_PM1_F7	3V	Single-ended 50Ω impedance
F8	IO_PM1_F8	3V	Single-ended 50Ω impedance
F9	PM_CLK_TOP	2.5V	Clock
F10	No Connect		No Connect
F11	LVDS_CLKEXT_N	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
F12	LVDS_CLKEXT_P	2.5V	
F13	TX_PM1_F13_N		MGT TX pair driven by host FPGA
F14	TX_PM1_F14_P		
F15	TX_PM1_F15_N		MGT TX pair driven by host FPGA
F16	TX_PM1_F16_P		
F17	RX_PM1_F17_N		MGT RX pair received by host FPGA
F18	RX_PM1_F18_P		
F19	RX_PM1_F19_N		MGT RX pair received by host FPGA
F20	RX_PM1_F20_P		

2.3.2 PM2 User I/O

The PM2 connector makes most of the LVDS pairs available to the user, along with single-ended signals. Table 2-6 shows the pinout for the PM2 connector.

Table 2-6: **PM2 Pinout**

PM2 Pin	Pin Description	FPGA Bank V_{CCO}	Pin Function
A1	IO_PM2_A1_N	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
A2	IO_PM2_A2_P	2.5V	
A3	IO_PM2_A3_N	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
A4	IO_PM2_A4_P	2.5V	
A5	IO_PM2_A5_N	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
A6	IO_PM2_A6_P	2.5V	
A7	IO_PM2_A7_N	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
A8	IO_PM2_A8_P	2.5V	
A9	IO_PM2_A9_N	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
A10	IO_PM2_A10_P	2.5V	
A11	IO_PM2_A11_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
A12	IO_PM2_A12_N	2.5V	
A13	IO_PM2_A13_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
A14	IO_PM2_A14_N	2.5V	
A15	IO_PM2_A15_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
A16	IO_PM2_A16_N	2.5V	
A17	IO_PM2_A17_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
A18	IO_PM2_A18_N	2.5V	
A19	IO_PM2_A19_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
A20	IO_PM2_A20_N	2.5V	
C1	IO_PM2_C1_N	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
C2	IO_PM2_C2_P	2.5V	
C3	IO_PM2_C3_N	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
C4	IO_PM2_C4_P	2.5V	
C5	IO_PM2_C5_N	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
C6	IO_PM2_C6_P	2.5V	
C7	IO_PM2_C7_N	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
C8	IO_PM2_C8_P	2.5V	

Table 2-6: **PM2 Pinout *(Continued)***

PM2 Pin	Pin Description	FPGA Bank V_{CCO}	Pin Function
C9	IO_PM2_C9_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
C10	IO_PM2_C10_N	2.5V	
C11	IO_PM2_C11_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
C12	IO_PM2_C12_N	2.5V	
C13	IO_PM2_C13_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
C14	IO_PM2_C14_N	2.5V	
C15	IO_PM2_C15_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
C16	IO_PM2_C16_N	2.5V	
C17	IO_PM2_C17_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
C18	IO_PM2_C18_N	2.5V	
C19	IO_PM2_C19_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
C20	IO_PM2_C20_N	2.5V	
D1	IO_PM2_D1_N	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
D2	IO_PM2_D2_P	2.5V	
D3	IO_PM2_D3_N	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
D4	IO_PM2_D4_P	2.5V	
D5	IO_PM2_D5_N	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
D6	IO_PM2_D6_P	2.5V	
D7	IO_PM2_D7_N	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
D8	IO_PM2_D8_P	2.5V	
D9	IO_PM2_D9_N	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
D10	IO_PM2_D10_P	2.5V	
D11	IO_PM2_D11_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
D12	IO_PM2_D12_N	2.5V	
D13	IO_PM2_D13_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
D14	IO_PM2_D14_N	2.5V	
D15	IO_PM2_D15_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
D16	IO_PM2_D16_N	2.5V	
D17	IO_PM2_D17_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
D18	IO_PM2_D18_N	2.5V	

Table 2-6: **PM2 Pinout *(Continued)***

PM2 Pin	Pin Description	FPGA Bank V_{CCO}	Pin Function
D19	IO_PM2_D19_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
D20	IO_PM2_D20_N	2.5V	
F1	IO_PM2_F1_N	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
F2	IO_PM2_F2_P	2.5V	
F3	IO_PM2_F3_N	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
F4	IO_PM2_F4_P	2.5V	
F5	IO_PM2_F5_N	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
F6	IO_PM2_F6_P	2.5V	
F7	IO_PM2_F7_N	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
F8	IO_PM2_F8_P	2.5V	
F9	No Connect		No Connect
F10	PM_CLK_BOT	2.5V	Clock
F11	IO_PM2_F11_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
F12	IO_PM2_F12_N	2.5V	
F13	IO_PM2_F13_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
F14	IO_PM2_F14_N	2.5V	
F15	IO_PM2_F15_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
F16	IO_PM2_F16_N	2.5V	
F17	IO_PM2_F17_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
F18	IO_PM2_F18_N	2.5V	
F19	IO_PM2_F19_P	2.5V	LVDS pair 100Ω differential impedance; can also be used as single-ended
F20	IO_PM2_F20_N	2.5V	

3 Mechanical Specification

3.1 Personality Module Dimensions

Figure 3-1 shows the dimensions for the personality module, also known as the adapter board.

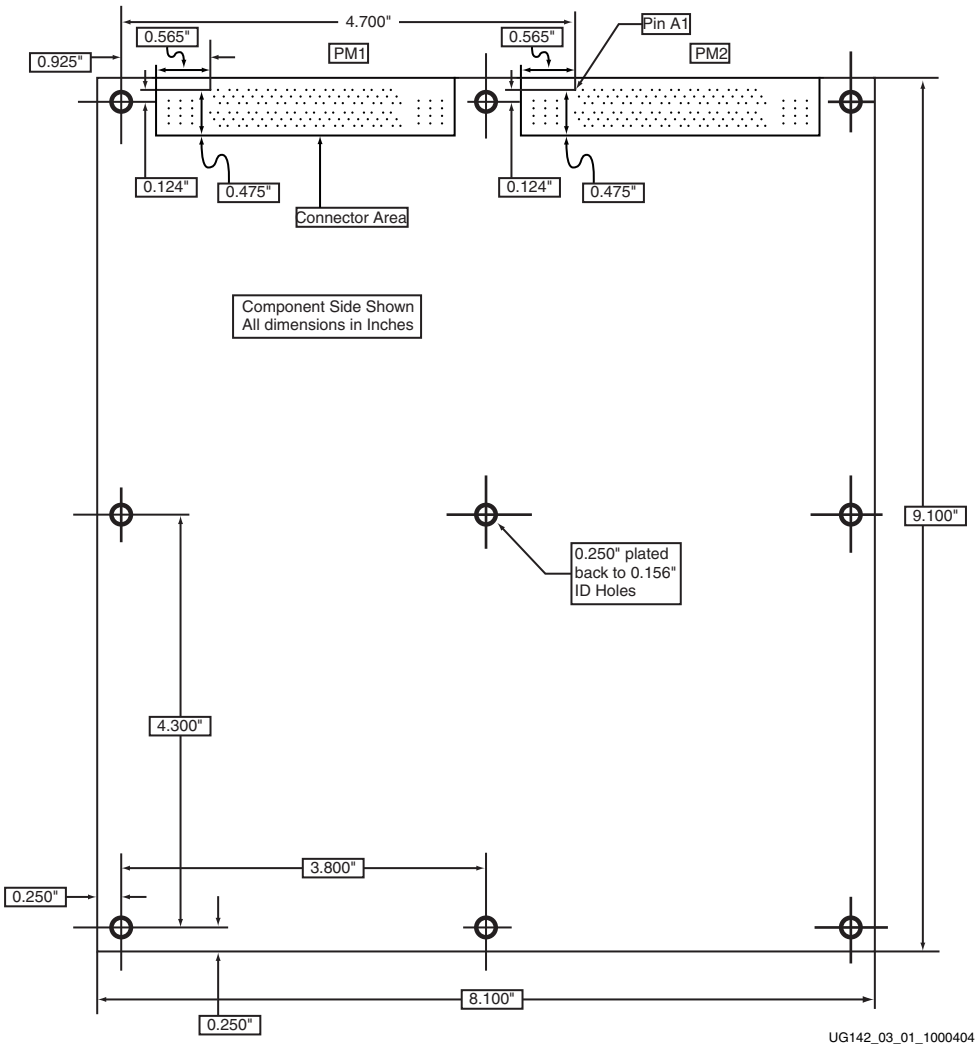

Figure 3-1: **Module Dimensions**

3.2 PCB Layout for Host Board Connector

Figure 3-2 shows the PCB layout for the XPM connectors on the host board.

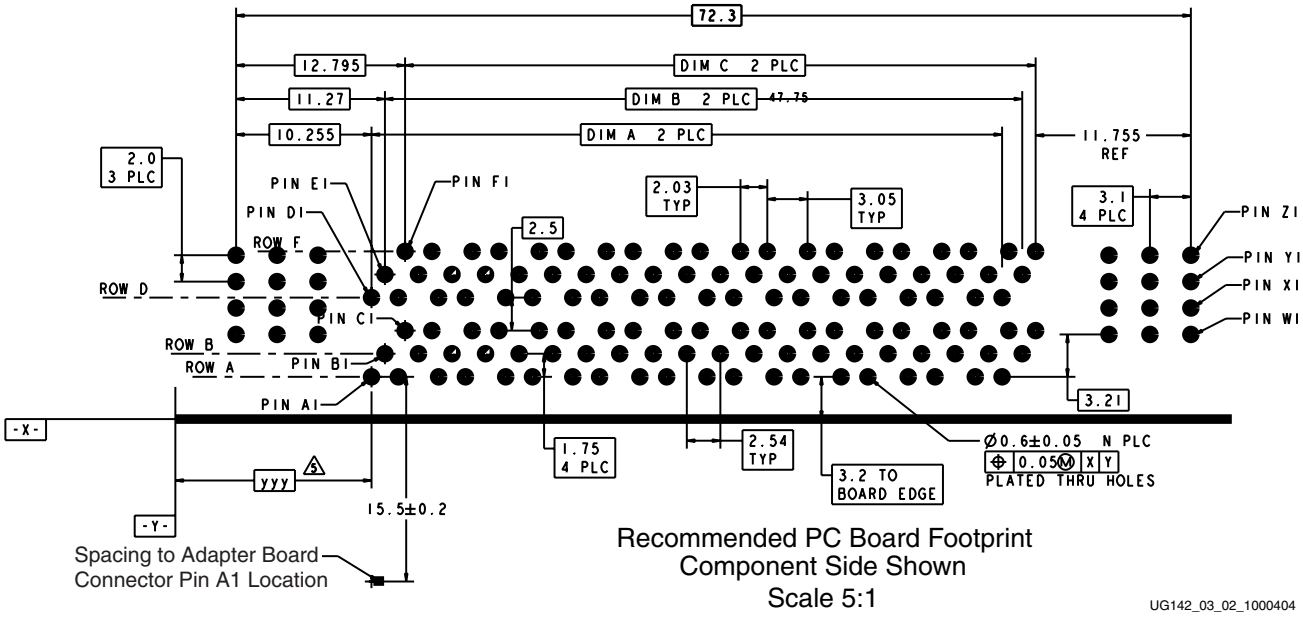

Figure 3-2: **PCB Layout for Host Board Connector**

3.3 PCB Layout for Adapter Board Connector

Figure 3-3 shows the PCB layout for the XPM connectors on the personality module.

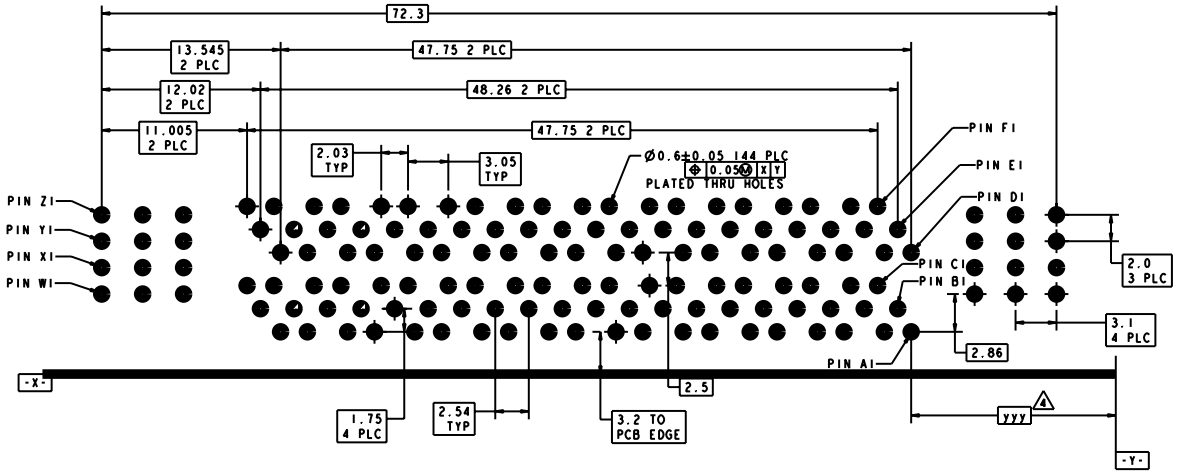

Figure 3-3: **PCB Layout for Adapter Board Connector**