AD-DAC-FMC-ADP
Quick Start Guide

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Getting Started with the AD-DAC-FMC-ADP Adapter Board

INTRODUCTION

The ADC-DAC-FMC-ADP adapter board allows any of Analog Devices' DPG2-compatiable High-Speed DAC Evaluation Boards to be used on a Xilinx® evaluation board with a FMC connector. The adapter board uses the Low Pin Count (LPC) version of the FMC connector, so it can be used on either LPC or HPC hosts (such as the ML605 or SP605).

A list of DPG2-compatiable evaluation boards can be found at http://www.analog.com/dpg

The schematic and layout are included in the following pages of this document. In addition, example UCF files for both the ML605 and SP605 are included as a starting point.

CLOCKING

Every DPG2-compatiable evaluation board provides two LVDS clocks to the host. These two clocks are always identical in both frequency and phase. On DACs using an LVDS interface, the host is then expected to output two LVDS clocks that are phase aligned to the data. It is very important that these clocks be generated the same way as the data, so that any delays inside the FPGA are matched. Therefore, this clock should be considered another data bit with a fixed "10101" pattern.

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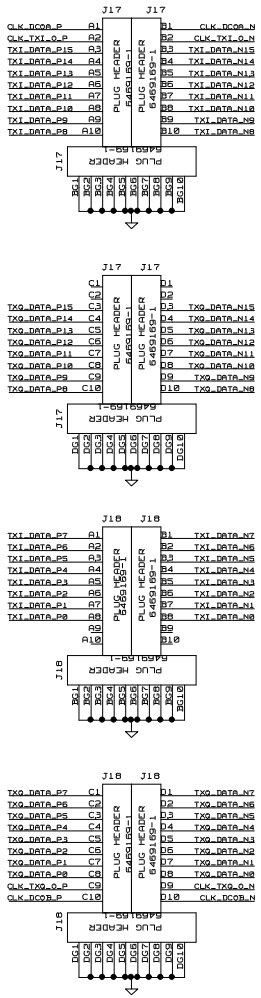
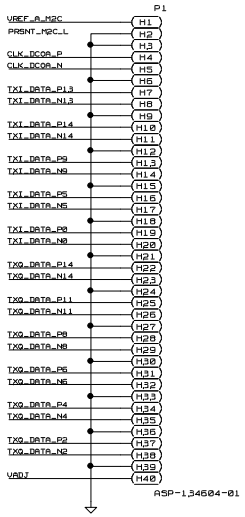
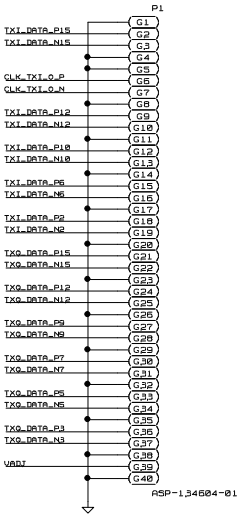
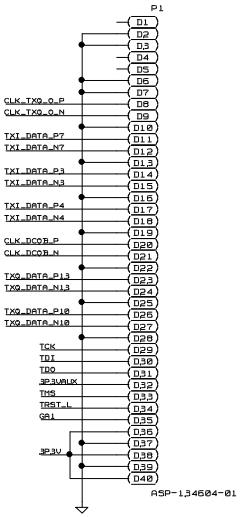
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
B	FIRST REVISION (PREVIOUS BOARD WAS HPC VERSION, WHICH THIS REPLACES)	7/2010	

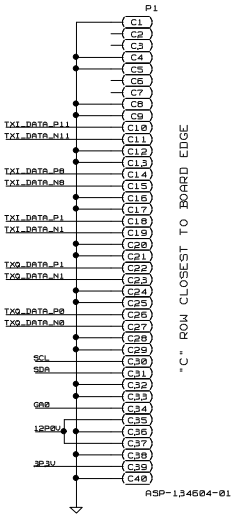
DPG2 CONNECTOR





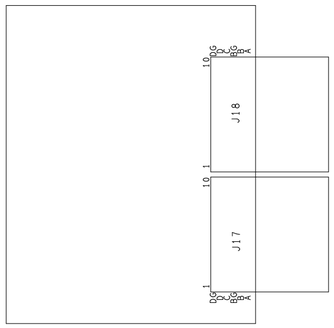


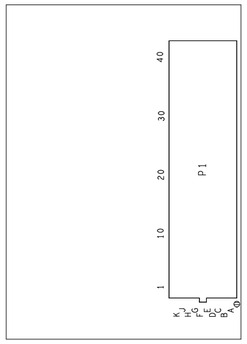




ANALOG DEVICES	SCHEMATIC	
	DPG2 LPC ADAPTER BRD AD-DAC-FMC-ADP -	
	DESIGN VIEW -	DRAWING NO. HSC 10033 REV A
	PTD ENGINEER J COUTERMARSH	SIZE D SCALE - SHEET 2 OF 2

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	16AUG10	J.C.





PRIMARY SIDE

SECONDARY SIDE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES
DECIMALS .XX +-.010 .XXX +-.005
FRACTIONS +-1/32
ANGLES +/- 2

MATERIAL

FINISH

DO NOT SCALE DWG

ASSEMBLY

	APPROVAL	DATE
DRAWN BY	W.D.B.	16AUG10
DESIGNED		
CHECKED		
APPROVED		
MFG ENGINEER		

ANALOG DEVICES

HSC
DIVISION
804 WOBURN STREET
WILMINGTON, MA 01887

TITLE
VITA57 TO DPGA ADAPTER BOARD (AD-DAC-FMC-ADP)

SIZE	FSCM NO	DRAWING NUMBER	REV
C		HSC 10033	A

SCALE 1/1

SHEET 1 OF 1

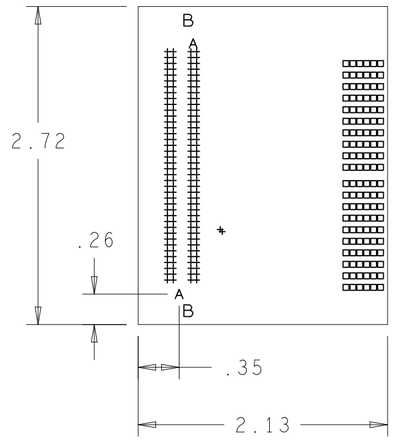
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	16AUG10	J.C.

NOTES:

MATERIALS: FR-4, IN ACCORDANCE WITH IPC-L-130 (LATEST REV.). GLASS FABRIC BASE, EPOXY RESIN, FIRE RESISTANT.
BONDING AGENT: PREIMPREGNATED B STAGE EPOXY GLASS CLOTH IN ACCORDANCE WITH IPC-L-109 (LATEST REV.).
CLADDING: EXTERNAL LAYERS 1/4 OZ. COPPER, OVERPLATE TO 1 OZ.
INTERNAL PLANE LAYERS 2 OZ. COPPER.
SOLDER MASK: SHALL BE BLUE LIQUID PHOTOIMAGABLE (LPI) APPLIED ON BOTH SIDES OVER BARE COPPER AND SHALL MEET IPC-SM-840 (LATEST REV.) CLASS 3.
SILK SCREEN: SHALL BE PERMANENT NON-CONDUCTIVE EPOXY INK, COLOR WHITE.
U.L. RATING: 94VO MINIMUM.

FABRICATION:

1. REFER TO IPC-6010 SERIES (LATEST REV.), CLASS 2 FOR FABRICATION UNLESS OTHERWISE SPECIFIED.
2. UNDIMENSIONED HOLES TO BE LOCATED WITHIN +/-.005 OF THEIR TRUE POSITION WITH RESPECT TO ARTWORK.
3. PLATED HOLE WALL THICKNESS SHALL NOT BE LESS THAN .001 INCH MINIMUM AVERAGE, WITH NO READING LESS THAN .0008 BY CROSS SECTION.
4. HOLE DIAMETERS APPLY AFTER PLATING.
5. FINISHED CONDUCTOR WIDTHS SHALL NOT BE REDUCED FROM THE NOMINAL, INDICATED ON THE MASTER PATTERN, BY MORE THAN THE CONDUCTOR THICKNESS.
6. MINIMUM DESIGN LINE WIDTH IS .008 INCH.
7. MINIMUM DESIGN SPACING IS .005 INCH.
8. BOARD/PANEL MUST MEET IPC-A-600 (LATEST REV.) CLASS 2 FOR FLATNESS.
9. MFGR. TO LEGIBLY ETCH OR STAMP/SCREEN WITH PERMANENT NON-CONDUCTIVE INK ON SECONDARY SIDE IN A CLEAR AREA UNLESS OTHERWISE INDICATED;
   A. U.L. CODE
   B. DATE CODE (STAMP)
   C. FLAMMABILITY RATING
   D. MFGR. LOGO
   E. SUCCESSFUL ELECTRICAL BOARD TEST.
10. NON-FUNCTIONAL PADS MAY BE REMOVED FROM INNER SIGNAL LAYERS AT MFGR. DISCRETION.
11. IF PAD SIZES PROVIDED ARE NOT LARGE ENOUGH TO MAINTAIN ANNULAR RING REQUIREMENT, MFGR. MAY TEAR DROP PADS TO MAINTAIN ANNULAR RING AT PAD TO CIRCUIT INTERFACE ONLY AND MUST INSURE ELECTRICAL INTEGRITY.
12. REPAIRS PER IPC-R-700 ARE ALLOWED.
13. MODIFICATIONS TO THE ARTWORK, OTHER THAN THOSE DESCRIBED ON THE FABRICATION DRAWING, ARE NOT ALLOWED WITHOUT WRITTEN AUTHORIZATION.
14. FINISH: SURFACES SHALL HAVE ENIG FINISH PLATED WITH 2-6 MICROINCHES OF IMMERSION GOLD OVER 100-200 MICROINCHES OF ELECTROLESS NICKEL.



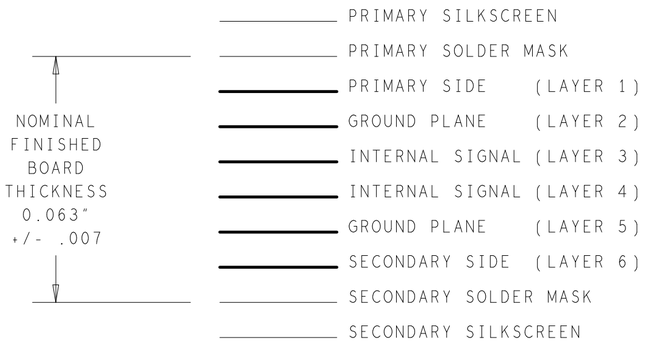
PRIMARY SIDE

HOLE TOLERANCE

UNLESS SPECIFIED
PLATED: +/- .003
NON PLATED: +/- .001

FINISHED HOLES IN MILS				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	PLATED	QTY	TOLERANCE/NOTES
+	10.0	PLATED	162	
□	24.0	PLATED	120	
A	50.0	NON-PLATED	2	
B	105.0	NON-PLATED	2	

6 LAYER STACKUP



DIFFERENTIAL IMPEDANCE = 100 OHMS +/- 10%
ARTWORK LINE WIDTH FOR IMPEDANCE CONTROLLED LINES = 0.005"

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES
DECIMALS .XX +-.010 .XXX +-.005 FRACTIONS +-1/32 ANGLES +/- 2

NCDRILL

	APPROVAL	DATE
MATERIAL	DRAWN BY W.D.B.	16AUG10
	DESIGNED	
	CHECKED	
FINISH	APPROVED	
	MFG ENGINEER	
DO NOT SCALE DWG		

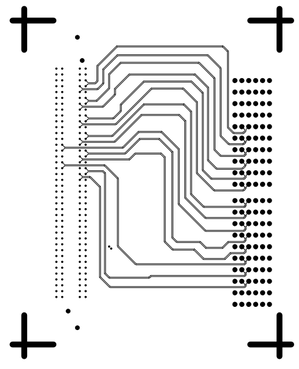
ANALOG DEVICES
HSC DIVISION
804 WOBURN STREET
WILMINGTON, MA 01887

TITLE: VITA57 TO DPGA ADAPTER BOARD (AD-DAC-FMC-ADP)

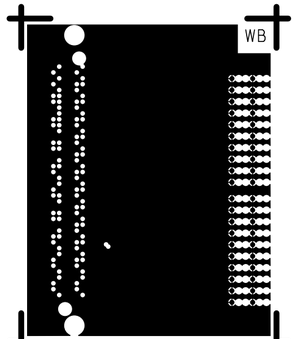
SIZE	FSCM NO	DRAWING NUMBER	REV
C		HSC 10033	A

SCALE 1/1 SHEET 1 OF 1

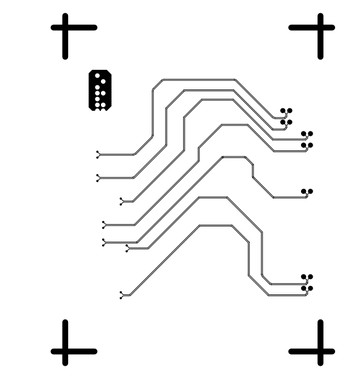
L1 PRIMARY
VITA57-DPG2 ADAPTER BRD
HSC 10033
REV A



L2_GROUND
VITA57-DPG2 ADAPTER BRD
HSC 10033
REV A



L3_SIGNAL
VITA57-DPG2 ADAPTER BRD
HSC 10033
REV A



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VITA57-DPG2 ADAPTER BRD
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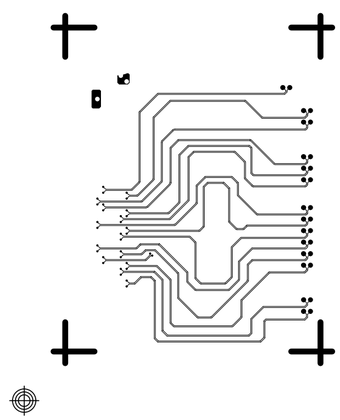
REV A



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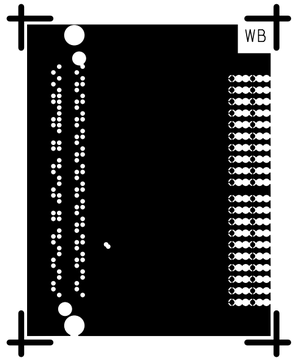
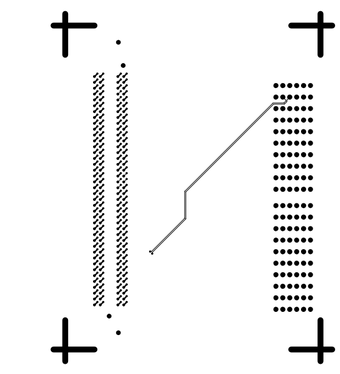
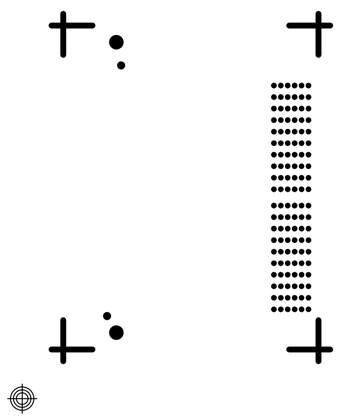
VITA57-DPG2 ADAPTER BRD
HSC 10033
REV A



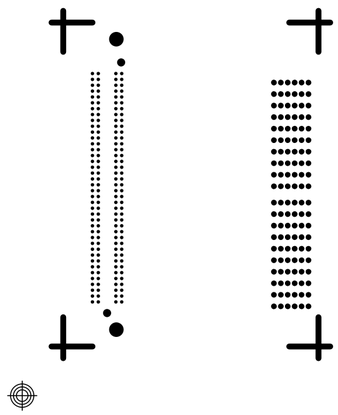
L6 SECONDARY
VITA57-DPG2 ADAPTER BRD
HSC 10033
REV A



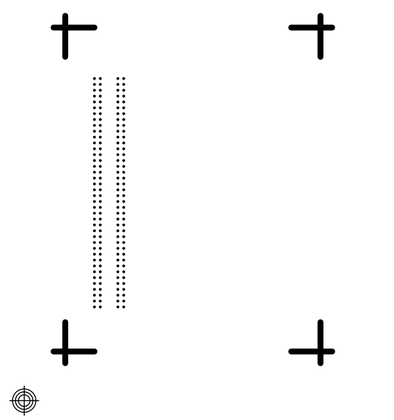
SOLDERMASK PRIMARY
VITA57-DPG2 ADAPTER BRD
HSC 10033
REV A



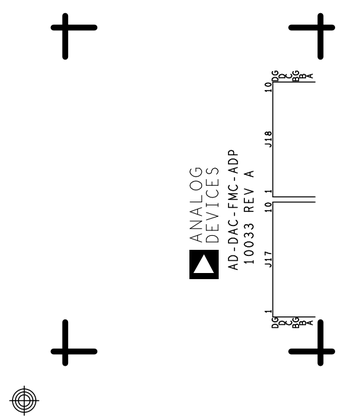
SOLDERMASK SECONDARY
VITA57-DPG2 ADAPTER BRD
HSC 10033
REV A



PASTEMASK SECONDARY
VITA57-DPG2 ADAPTER BRD
HSC 10033
REV A



SILKSCREEN PRIMARY
VITA57-DPG2 ADAPTER BRD
HSC 10033
REV A



SILKSCREEN SECONDARY
VITA57-DPG2 ADAPTER BRD
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REV A