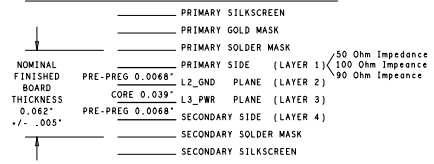
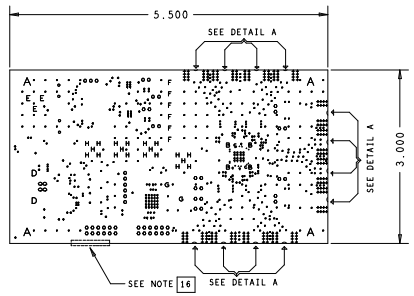
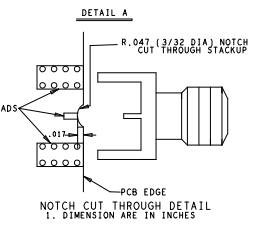


REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	21FEB13	LIANG XU
B	AS PER ECR-047857	30SEP14	LIANG XU

4 LAYER STACKUP



CHARACTERISTIC IMPEDANCE 10%		
DESIGNED LINE/SPACE	FINISHED LINE/SPACE	
50 OHMS	.012"	.0125"
90 OHMS	.010"/.006"	.0095"/.0065"
100 OHMS	.008"/.0065"	.0075"/.007"



SPECIFICATIONS:

MATERIALS: ALL LAMINATES AND BONDING MATERIALS SHOULD BE SELECTED FROM IPC-4101 OR IPC-4103, MINIMUM Tg>170degC, Td>300degC, U.L. RATING OF 94 V-0

MATERIAL FAMILY: FR408HR

CLADDING: EXTERNAL LAYERS .5 OZ. COPPER, OVERPLATE TO 1.5 OZ. INTERNAL SIGNAL LAYERS .5 OZ. COPPER. INTERNAL PLANE LAYERS 1 OZ. COPPER.

SOLDER MASK: SHALL BE LIQUID PHOTOIMAGEABLE (LPI) APPLIED ON BOTH SIDES OVER BARE COPPER OR GOLD AND SHALL MEET IPC-SM-840 (LATEST REV.) CLASS 3, COLOR BLUE.

SILK SCREEN: SHALL BE PERMANENT NON-CONDUCTIVE EPOXY INK, COLOR: WHITE SYNTHETIC INKJET PRINTING ALLOWED FOR DENSE BOARDS, COLOR: WHITE

SURFACE FINISH: SURFACE TO BE HARD GOLD PLATE IN PRIMARY AND SECONDARY PROCESS PER MIL-G-45204B, CLASS 1, GRADE C, TYPE 1. PRIMARY GOLD TO BE 05-15 MICRO INCHES MAXIMUM OVER LOW STRESS NICKEL PLATING 200 MICRO INCHES MINIMUM PER DO-N-290, CLASS 1 REPLATE SECONDARY PROCESS WITH 50 MICRO INCHES MINIMUM ON SELECTIVE AREA PROVIDED.

INTENTIONAL SHORTS: IF SUPPLIED DATA INCLUDES A FILE "READ_ME.2", THEN INTENTIONAL NET SHORTS EXIST. CUSTOMER REVIEW AND APPROVAL IS REQUIRED IF SUPPLIED DATA REPORTS ANY CONDITION THAT DOES NOT MATCH "READ_ME.2" FILE PROVIDED.

TEST REQUIREMENTS: 100% NETLIST ELECTRICAL VERIFICATION USING CUSTOMER SUPPLIED IPC-D-356 NETLIST FOR OPENS AND SHORTS WHEN "GERBER DATA" IS PROVIDED, THIS VERIFICATION ALSO REQUIRED FOR "ODB+" DATA PER EMBEDDED NETLIST.

ROHS COMPLIANCE NOTE: (Required for Customer Boards) Add to top of MATERIALS HOMOGENOUS MATERIALS IN THIS BOARD SHALL BE COMPLIANT THE EU RoHS DIRECTIVE 2002/95/EC

REQUIREMENTS:

- REFER TO IPC-6010 SERIES (LATEST REV.), CLASS 2 FOR FABRICATION UNLESS OTHERWISE SPECIFIED.
- ACCEPTABILITY PER ANALOG DEVICES, INC. SPECIFICATION TST00115. (LATEST REVISION.)
- MODIFICATIONS TO THE ARTWORK ARE NOT ALLOWED WITHOUT WRITTEN AUTHORIZATION.
- HOLE PATTERN TOLERANCES FOR UNDIMENSIONED HOLES SHALL BE A DIAMETER OF 0.005 INCHES FROM THEIR TRUE POSITION.
- PLATED HOLE WALL THICKNESS SHALL NOT BE LESS THAN 0.001 INCH MINIMUM AVERAGE, WITH NO READING LESS THAN .0006 BY CROSS SECTION.
- HOLE DIAMETERS APPLY AFTER PLATING.
- FINISHED CONDUCTOR WIDTHS SHALL NOT BE REDUCED FROM THE NOMINAL INDICATED ON THE MASTER PATTERN, BY MORE THAN THE CONDUCTOR THICKNESS.
- MINIMUM DESIGN LINE WIDTH IS .008 INCH.
- MINIMUM DESIGN SPACING IS .00581 INCH.
- NON-FUNCTIONAL PAD REMOVAL FROM INNER SIGNAL LAYERS MAY BE PERFORMED AFTER CUSTOMER APPROVAL.
- IF PAD SIZES PROVIDED ARE NOT LARGE ENOUGH TO MAINTAIN ANNULAR RING REQUIREMENT, MFR. MAY REQUEST APPROVAL TO TEAR DROP PADS TO MAINTAIN ANNULAR RING. (AT PAD TO TRACE INTERSECTION ONLY AND ELECTRICAL INTEGRITY MUST BE MAINTAINED.)
- THEIVING MAY BE ADDED TO COMPENSATE FOR LOW COPPER DENSITY AREAS ON THIS DESIGN ONLY AFTER REVIEW AND APPROVAL FROM THE CUSTOMER:
 - A. THEIVING TO CARD EDGE, FIDUCIALS, NON-PLATED THROUGH HOLES, ALL OTHER FEATURES TO BE 0.200 INCH MINIMUM.
 - B. THERE SHALL BE NO THEIVING IN ANY AREAS FREE OF SOLDER MASK OR INTERNAL COPPER PLANES.
- MFR. 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-FLAMMABILITY RATING
 - B. DATE CODE (STAMP)
 - C. LOT NUMBER
 - D. MFR LOGO
 - E. SUCCESSFUL ELECTRICAL TEST.
- REPAIRS PER IPC-7711/21 (LATEST REV.) ARE ALLOWED. REPAIRS ARE NOT ALLOWED IN ANY AREA DEFINED ON GOLD_PWM AND/OR GOLD_SEC ARTWORK LAYERS WHEN PROVIDED IN GERBER OR ODB+ DATA.
- THRU VIAS FILLED WITH NON-CONDUCTIVE EPOXY AND PLATED OVER. COPLANAR ON BOTH SIDES PRIOR TO FINAL PLATING.
- COPPER IS INTENTIONALLY EXTENDED PAST THE BOARD EDGE TO SHOW BOARD CONSTRUCTION.

DRILL CHART: TOP to BOTTOM				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	TOLERANCE	PLATED	QTY
-	10.0	+3.0/-3.0	PLATED	15
-	12.0	+3.0/-3.0	PLATED	443
-	12.01	+3.0/-3.0	PLATED	87
-	16.0	+3.0/-3.0	PLATED	192
-	20.0	+3.0/-3.0	PLATED	67
-	35.0	+3.0/-3.0	PLATED	4
o	40.0	+3.0/-3.0	PLATED	4
o	45.0	+3.0/-3.0	PLATED	57
h	60.0	+3.0/-3.0	PLATED	20
o	63.0	+3.0/-3.0	PLATED	2
f	65.0	+3.0/-3.0	PLATED	6
e	75.0	+3.0/-3.0	PLATED	3
d	90.0	+3.0/-3.0	PLATED	2
c	33.0	+2.0/-2.0	NON-PLATED	2
b	63.0	+2.0/-2.0	NON-PLATED	4
A	125.0	+2.0/-2.0	NON-PLATED	4

SEE NOTE 15 FOR VIA FILL INSTRUCTION

PRIMARY SIDE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVAL	DATE		WWM DIVISION 804 WOBURN STREET WILMINGTON, MA 01897	
TOLERANCES	TEMPLATE ENGINEER				
DECIMAL FRACTIONS UNLESS SHOWN OTHERWISE	TRAINING CENTER				
.010 - .005	TRAINING SYSTEM				
.005 - .002	TEST ENGINEER		TITLE	FABRICATION	
MATERIAL	COMPONENT ENGINEER			AD9578 CUSTOMER	
	TEST PROCESS			EVALUATION BOARD	
	MARKING RELEASE				
FINISH	DATE	SIZE	FCM NO	DRAWING NUMBER	REV
BY: JAYNE 11 11FEB13	BY: JAYNE 11 11FEB13	D	24355	09-035762	B
BY: ANDREW 11 21FEB13	BY: ANDREW 11 21FEB13				
BY: CHUCK 11 21FEB13	BY: CHUCK 11 21FEB13				
DO NOT SCALE DWG	CHECKER	SCALE	1/1	SHEET	1 of 1

NO TEMPLATE - CUSTOMER EVALUATION BOARD