

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	12OCT12	A. BROWNE
B	REVISED LAYER 4 PLNE UNDER DUT. MOUNTING HOLES	12MAR15	D.LWETOURNAU
C	REVISED AND REDRAWN.	27JUL15	R.WILSON

**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;** FR-408HR

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

**NOTE:** IF THE LAYER STACKUP CONFLICTS WITH THE ABOVE CLADDING SPECIFICATIONS THEN THE LAYER STACKUP SHALL TAKE PRECEDENCE.

**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 SILVER IMMERSION

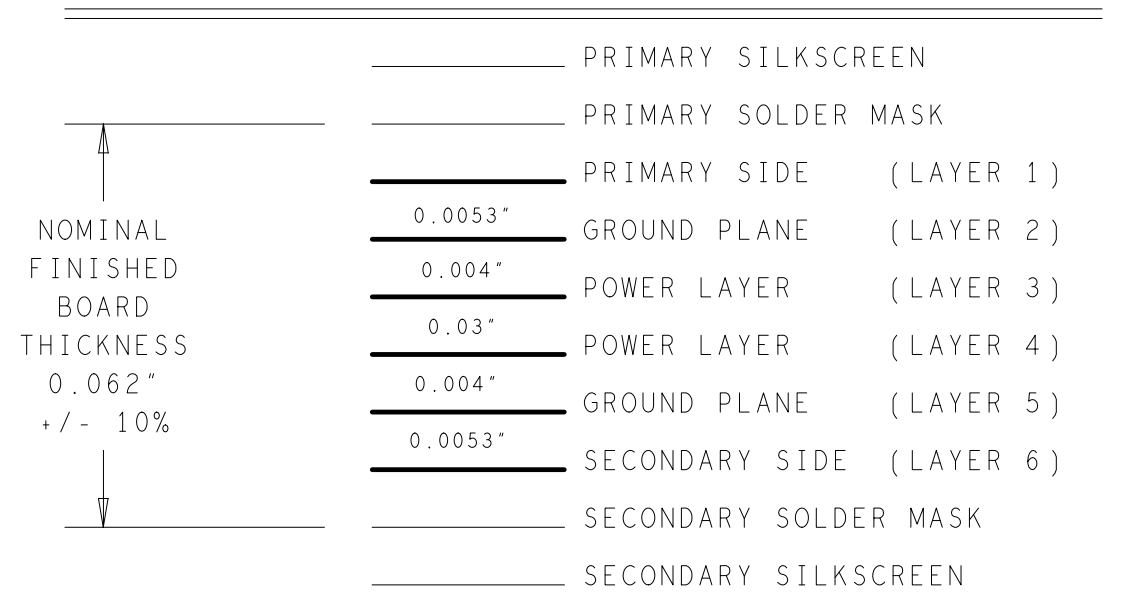
**INTENTIONAL SHORTS;** IF SUPPLIED DATA INCLUDES A FILE "READ\_ME.2", THEN INTENTIONAL NET SHORTS EXIST. CUSTOMER REVIEW AND APPROVAL IS REQUIRED IF SUPPLIED DATA REPORTS ANY CONDITION THAT DOES NOT MATCH "READ\_ME.2" FILE PROVIDED.

**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.

**REQUIREMENTS:**

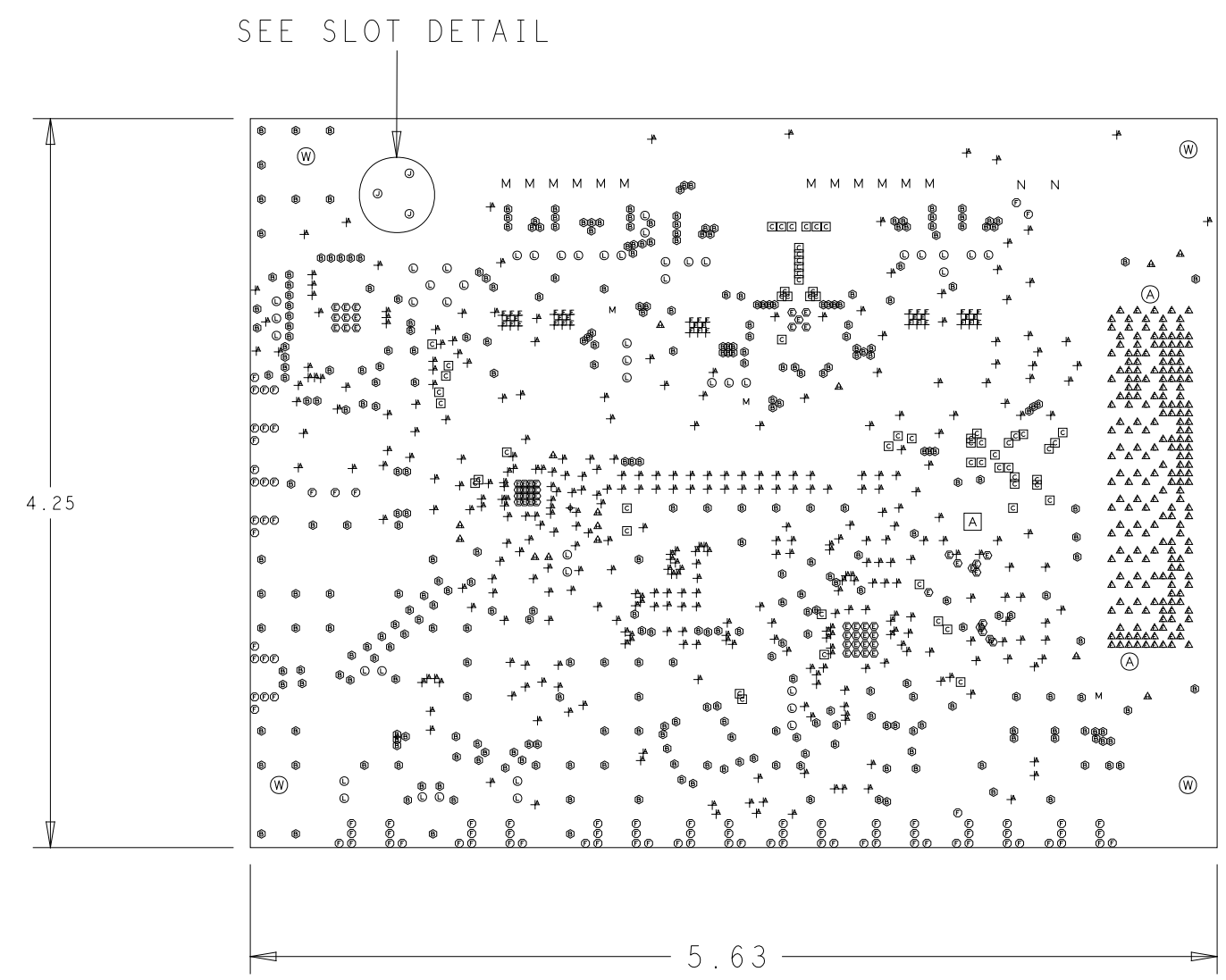
- REFER TO IPC-6010 SERIES (LATEST REV.), CLASS 2 FOR FABRICATION UNLESS OTHERWISE SPECIFIED.
- ACCEPTABILITY PER ANALOG DEVICES, INC. SPECIFICATION TST00115. (LATEST REVISION.)
- MODIFICATIONS TO THE ARTWORK ARE NOT ALLOWED WITHOUT WRITTEN AUTHORIZATION.
- HOLE PATTERN TOLERANCES FOR UNDIMENSIONED HOLES 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 .0008 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 .005 INCH.
- MINIMUM DESIGN SPACING IS .005 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, MFGR. MAY REQUEST APPROVAL TO TEAR DROP PADS TO MAINTAIN ANNULAR RING. (AT PAD TO TRACE INTERSECTION ONLY AND ELECTRICAL INTEGRITY MUST BE MAINTAINED.)
- THIEVING MAY BE ADDED TO COMPENSATE FOR LOW COPPER DENSITY AREAS ON THIS DESIGN ONLY AFTER REVIEW AND APPROVAL FROM THE CUSTOMER:
  - A. THIEVING TO CARD EDGE, FIDUCIALS, NON-PLATED THROUGH HOLES, ALL OTHER FEATURES TO BE 0.200 INCH MINIMUM.
  - B. THERE SHALL BE NO THIEVING IN ANY AREAS FREE OF SOLDER MASK OR INTERNAL COPPER PLANES.
- REPAIRS PER IPC-7711/21 (LATEST REV.) ARE ALLOWED.
- THRU VIAS FILLED WITH NON-CONDUCTIVE EPOXY AND PLATED OVER. COPLANAR ON BOTH SIDES WITHIN .001 INCH PRIOR TO FINAL PLATING.

**6 LAYER STACKUP**



CHARACTERISTIC IMPEDANCE = 50 OHMS +/- 5%  
ARTWORK LINE WIDTH FOR SINGLE ENDED:  
IMPEDANCE CONTROLLED LINES LAYER 1&6 = 0.0085"

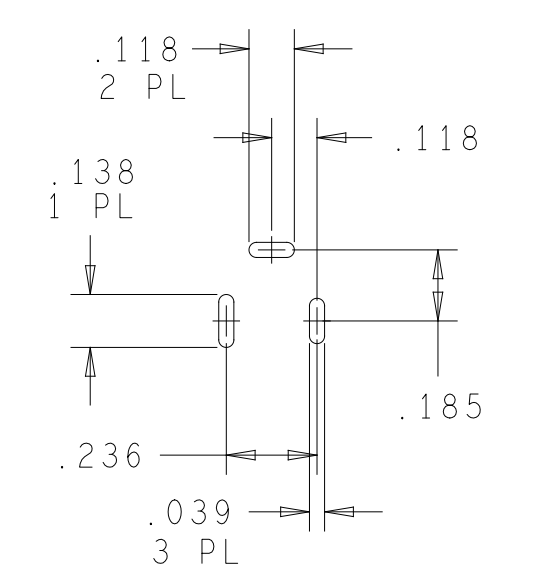
CHARACTERISTIC IMPEDANCE = 100 OHMS +/- 5%  
ARTWORK LINE WIDTH/SPACING FOR DIFF PAIRS:  
IMPEDANCE CONTROLLED LINES LAYER 1&6 = 0.0045"/0.0055"



**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	354	
*	10.01	PLATED	40	MAX-FILLED
□	12.0	PLATED	61	
•	13.0	PLATED	58	MAX-FILLED
▲	15.0	PLATED	205	MAX-FILLED
•	16.0	PLATED	349	
•	20.0	PLATED	94	
▲	30.0	PLATED	14	
▼	35.0	PLATED	3	
•	39.0	PLATED	3	SEE SLOT DETAIL
•	45.0	PLATED	46	
▼	50.0	PLATED	12	
▼	65.0	PLATED	2	
⊙	50.0	NON-PLATED	2	
⊙	140.0	NON-PLATED	4	+2/-0 MILS
⊠	160.0	NON-PLATED	1	



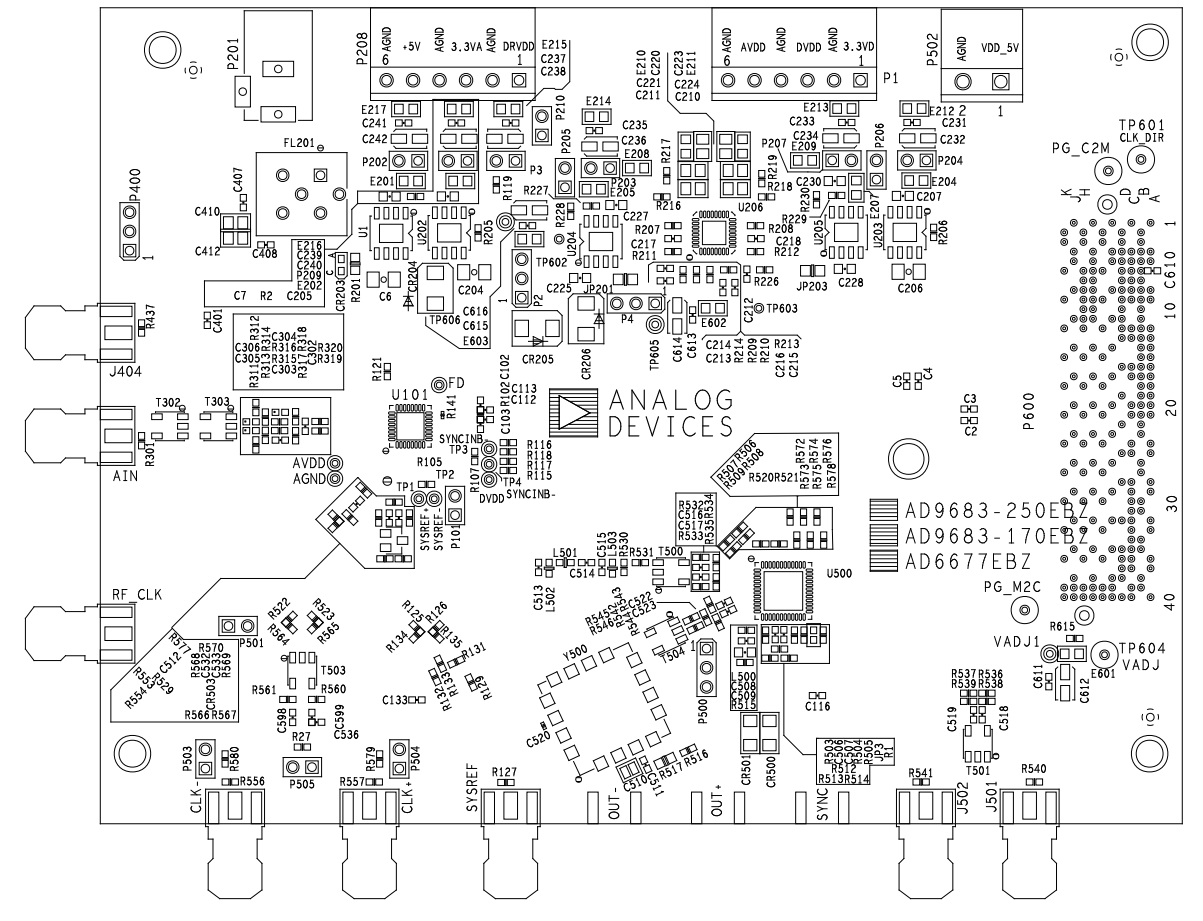
PLATED SLOT DETAIL  
HOLE LENGTHS AND WIDTHS +/- .005

**PRIMARY SIDE**

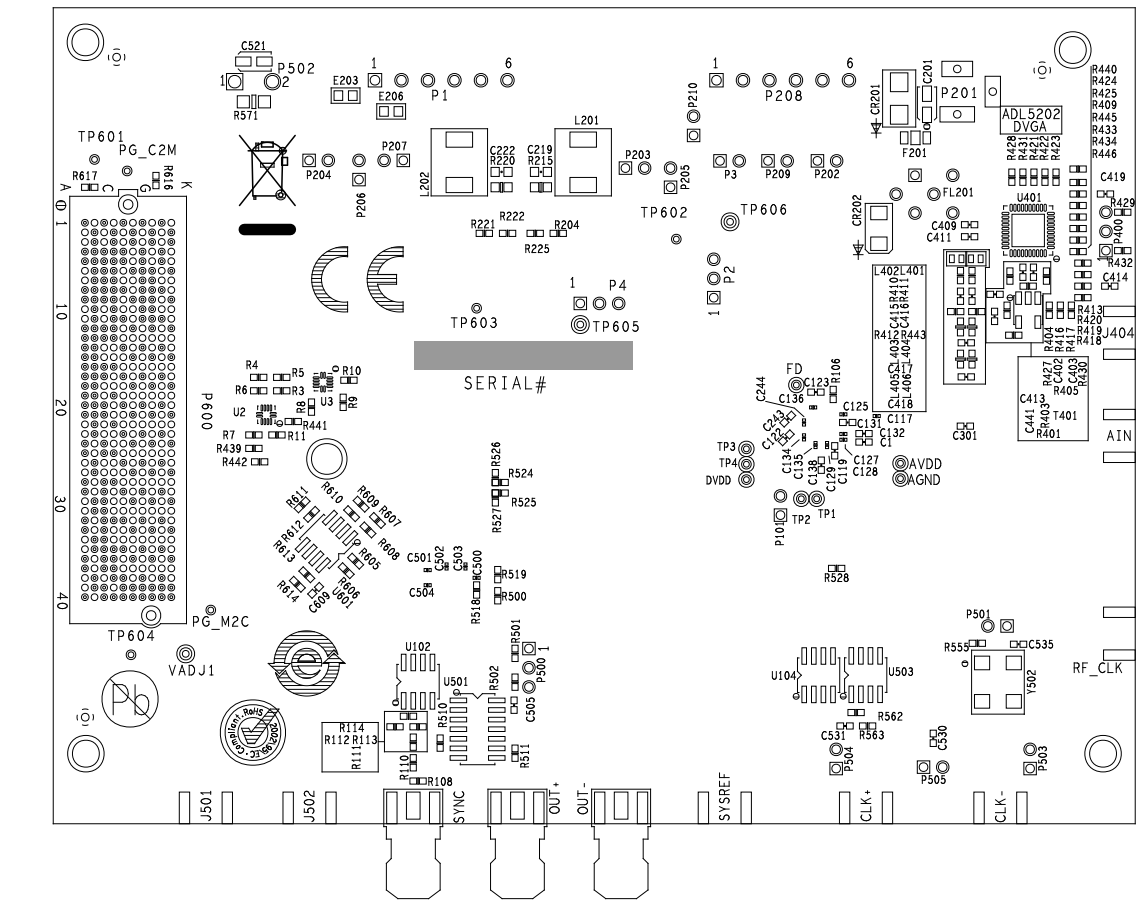
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVAL	DATE		WWM DIVISION 804 WOBURN STREET WILMINGTON, MA 01887
TOLERANCES	N/A	ddMMyy		
DECIMALS FRACTIONS ANGLES	HARDWARE SERVICES	ddMMyy	TITLE FABRICATION AD9683-250/AD9683-170/AD6677-250 Characterisation Board	
.XX . . . 016 . . . 1/32 . . . 2	R. MACDONALD	ddMMyy		
.XXX . . . 005 . . . 2	HARDWARE SYSTEMS	ddMMyy	DESIGNER D. LE TOURNEAU 14MAR14 SIZE FSCM NO DRAWING NUMBER REV D 24355 09-040310 C	
.XXXX . . . 0050 . . . 2	J. BURKE	ddMMyy		
MATERIAL	TEST ENGINEER	ddMMyy	SCALE 1/1 SHEET 1 OF 1	
0.062 THICK LAYERED MATERIAL PER NOTES/STACKUP	J. REANE	ddMMyy		
FINISH	COMPONENT ENGINEER	ddMMyy		
SILVER IMMERSION	A. MABAET	ddMMyy		
DO NOT SCALE DWG	TEST PROCESS	ddMMyy		
	N/A	ddMMyy		
	HARDWARE RELEASE	ddMMyy		
	R. AMARILLE	ddMMyy		

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SILKSCREEN PRIMARY  
08-040310-03  
REV C



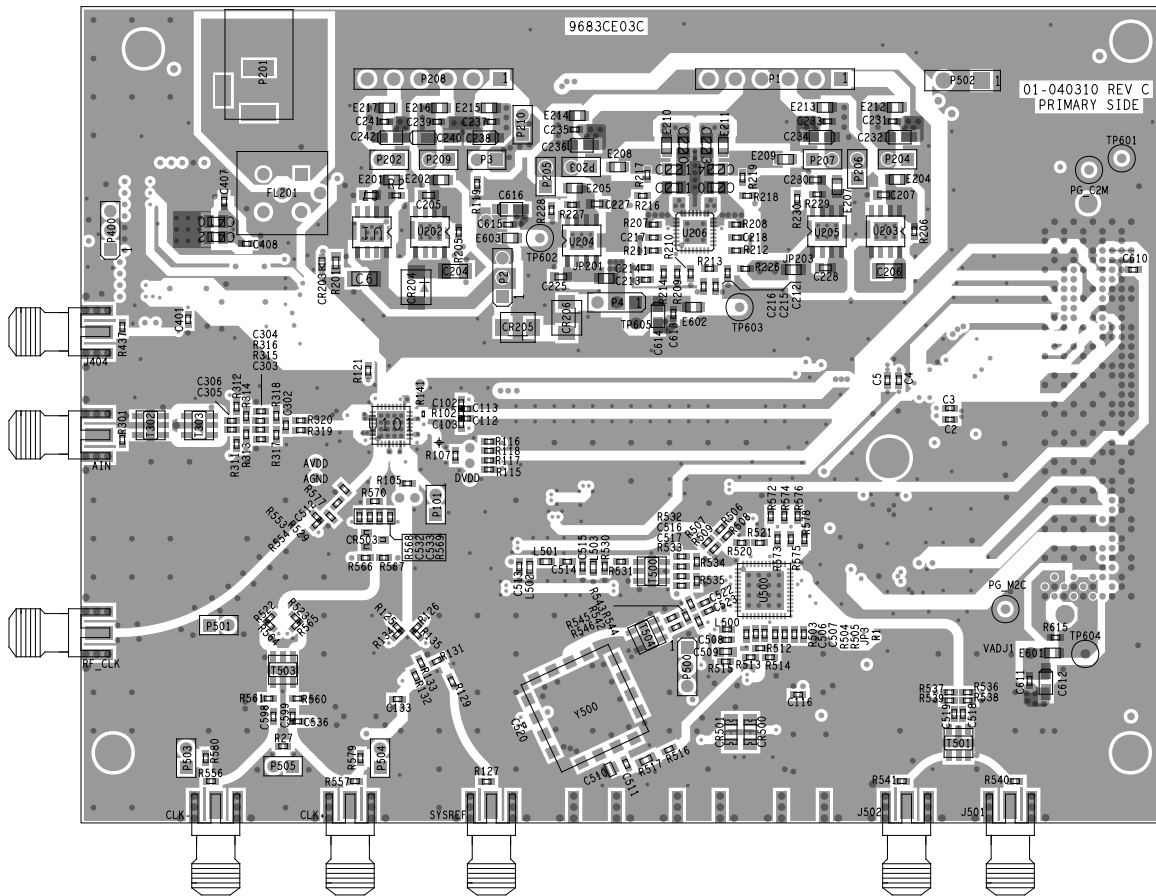
SILKSCREEN SECONDARY  
08-040310-03  
REV C



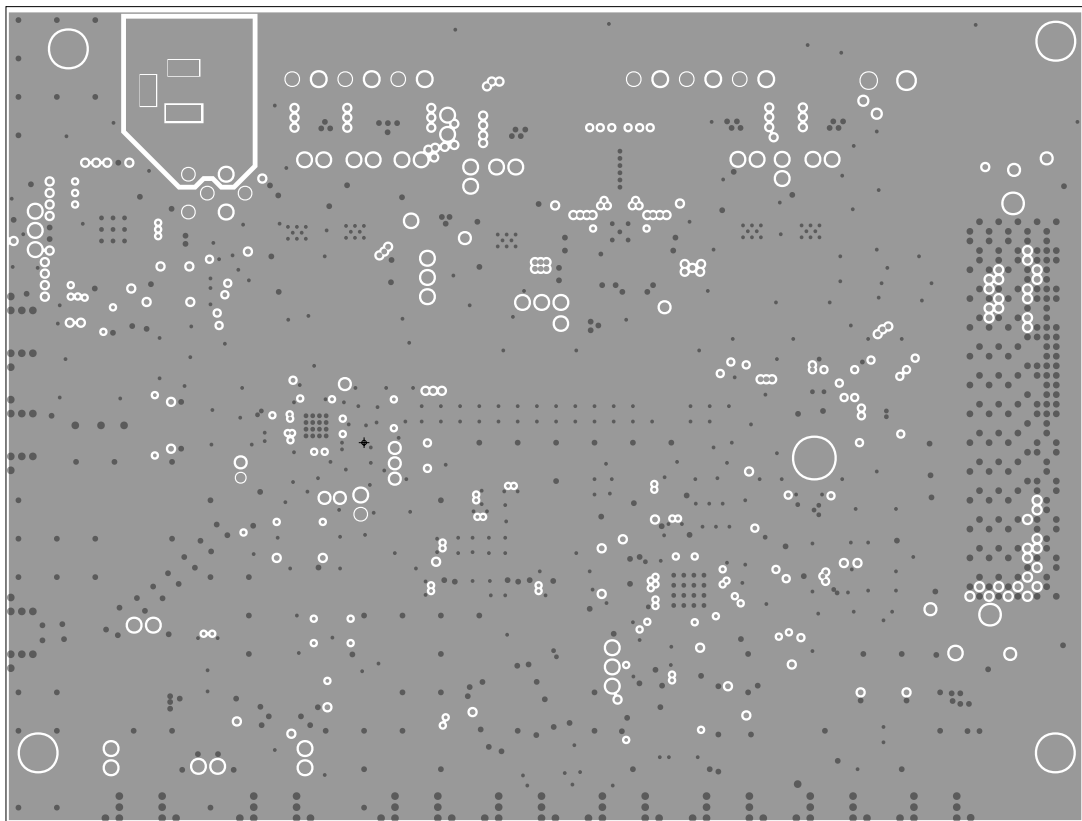
PRIMARY SIDE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES DECIMALS FRACTIONS ANGLES .XX -.010 .XXX -.005 .XXXX -.0050	APPROVAL N/A	DATE ddMMyy	 WWM DIVISION 804 WOBURN STREET WILMINGTON, MA 01887			
	MATERIAL	TEST ENGINEER J. KEANE	ddMMyy	TITLE ASSEMBLY AD9683-250/AD9683-170/AD6677-250 Characterisation Board		
FINISH	DESIGNER D. LE TOURNEAU	14MAR14	SIZE D	FSCM NO 24355	DRAWING NUMBER 01- 040310	REV C
DO NOT SCALE DWG	SCALE	1/1	SHEET		1 OF 1	

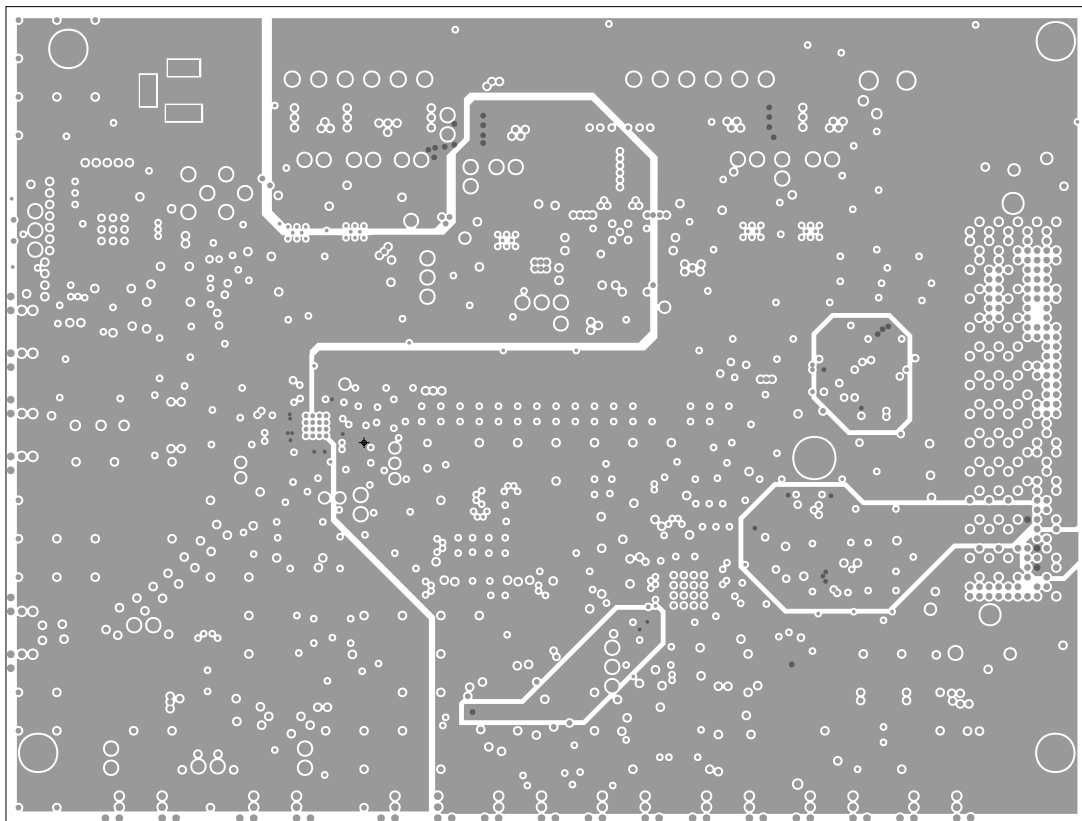
L1 PRIMARY  
08-040310-01  
REV C



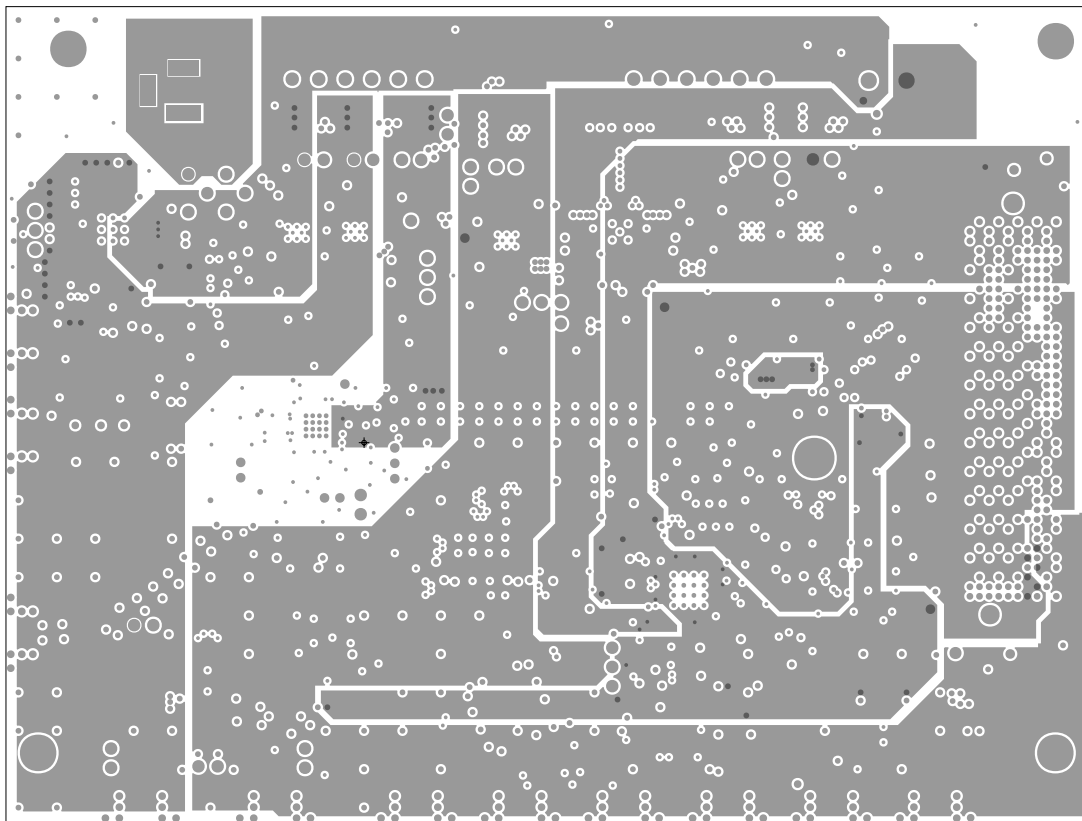
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08-040310-07  
REV C



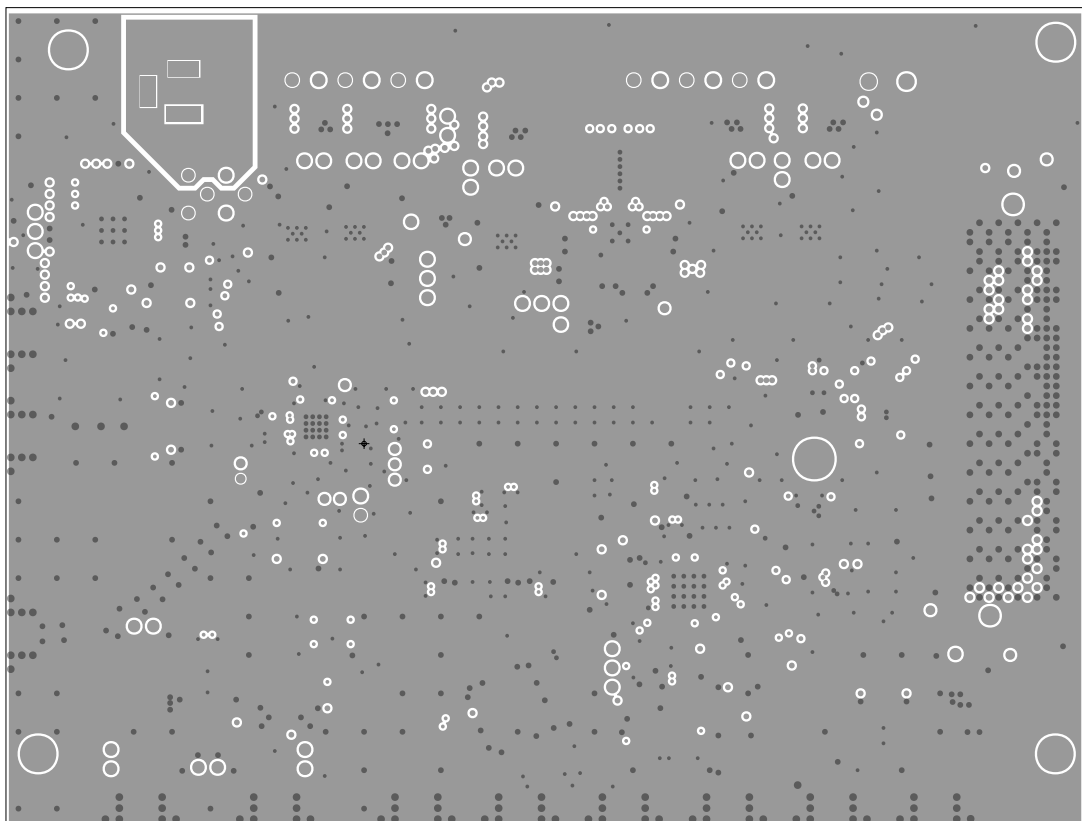
L3 PWR  
08-040310-08  
REV C



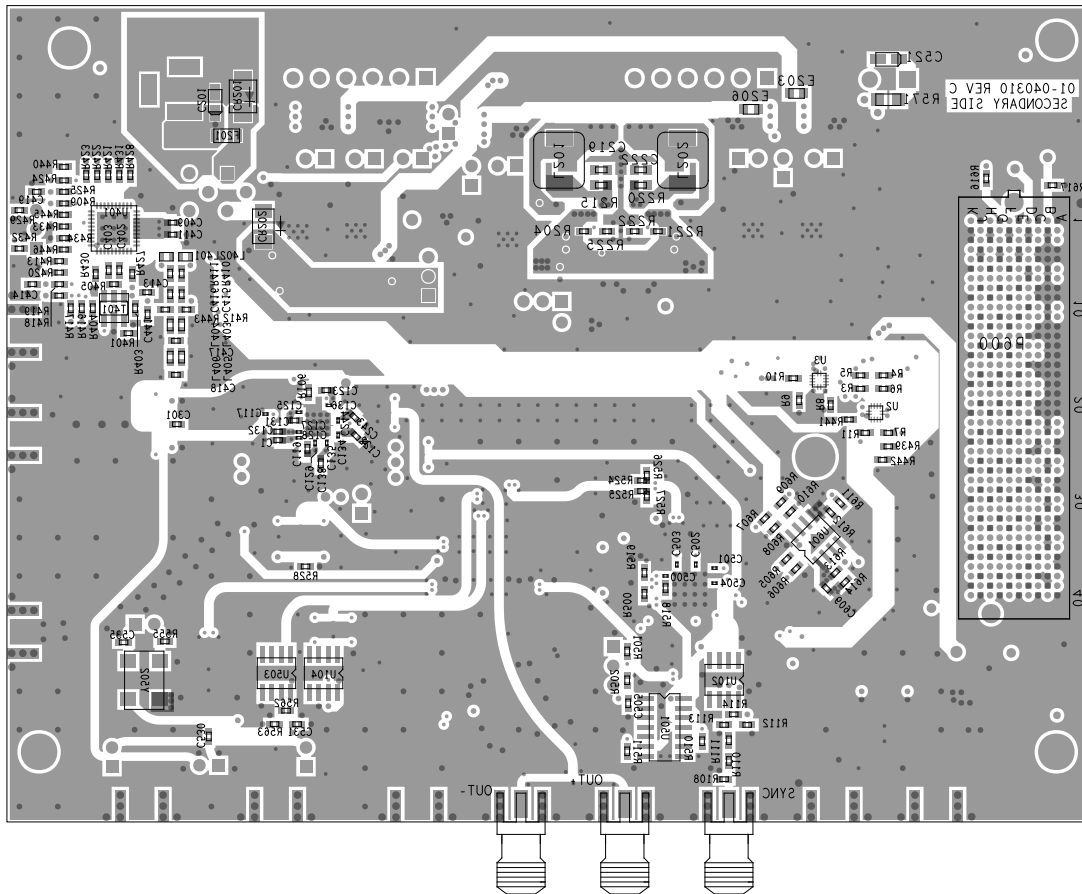
L4 PWR  
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REV C



L5 GND  
08-040310-10  
REV C

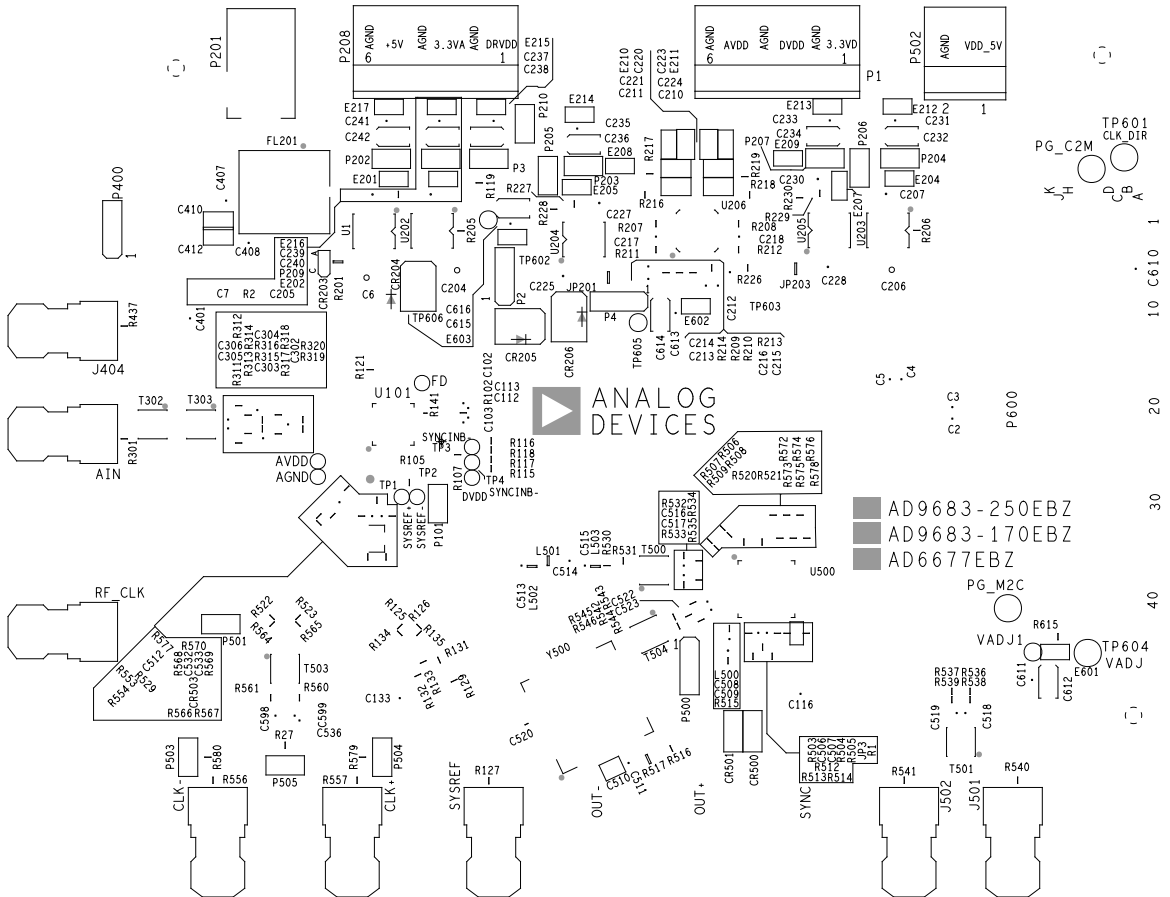


L6 SECONDARY  
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REV C

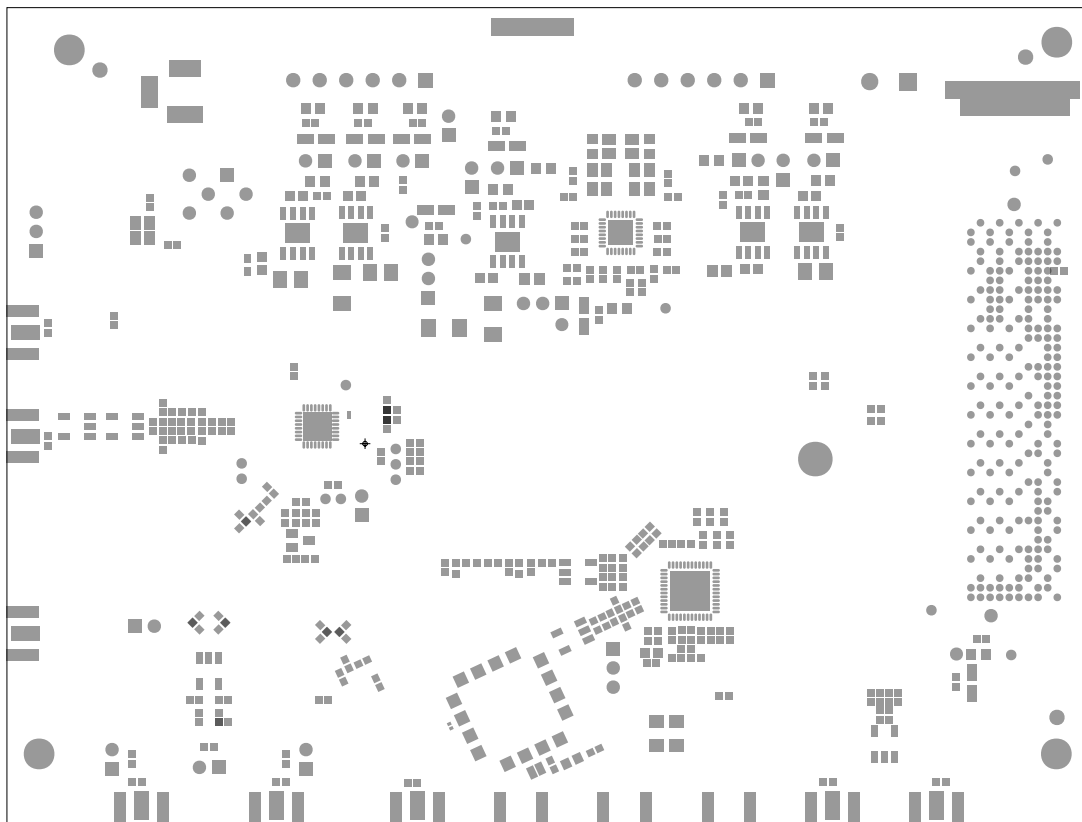




SILKSCREEN PRIMARY  
08-040310-03  
REV C



SOLDERMASK PRIMARY  
08-040310-04  
REV C

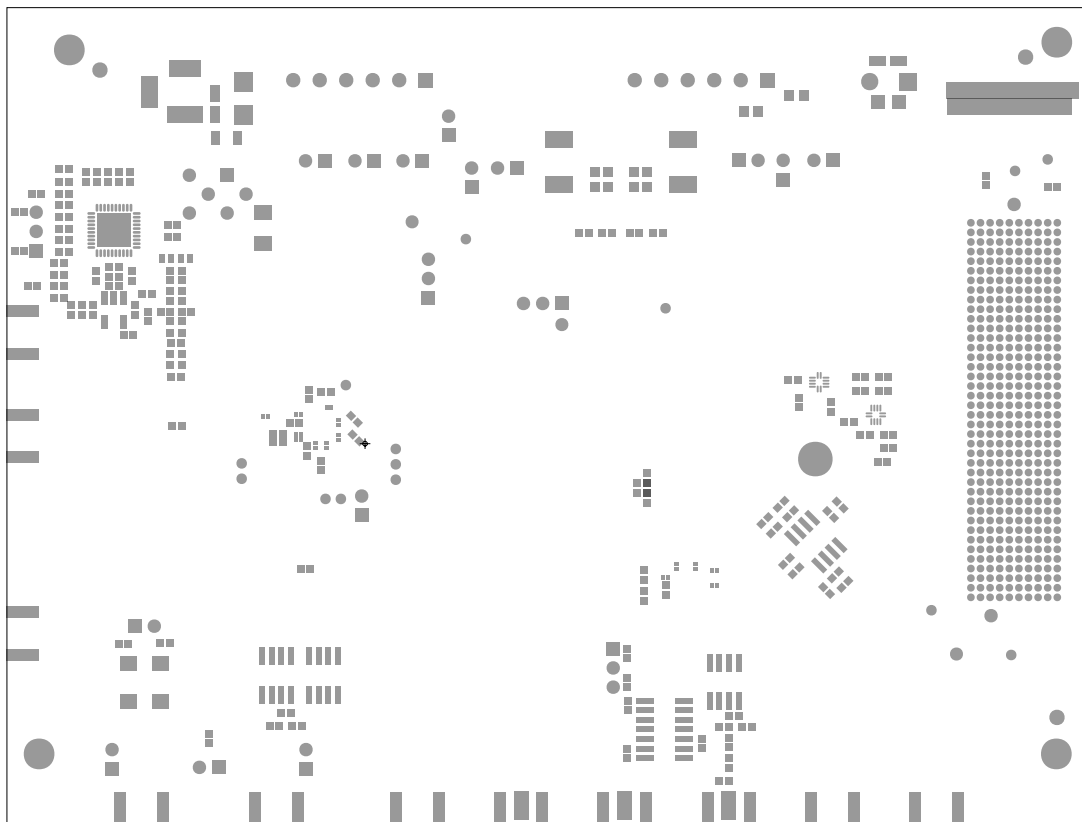




SOLDERMASK SECONDARY

08-040310-06

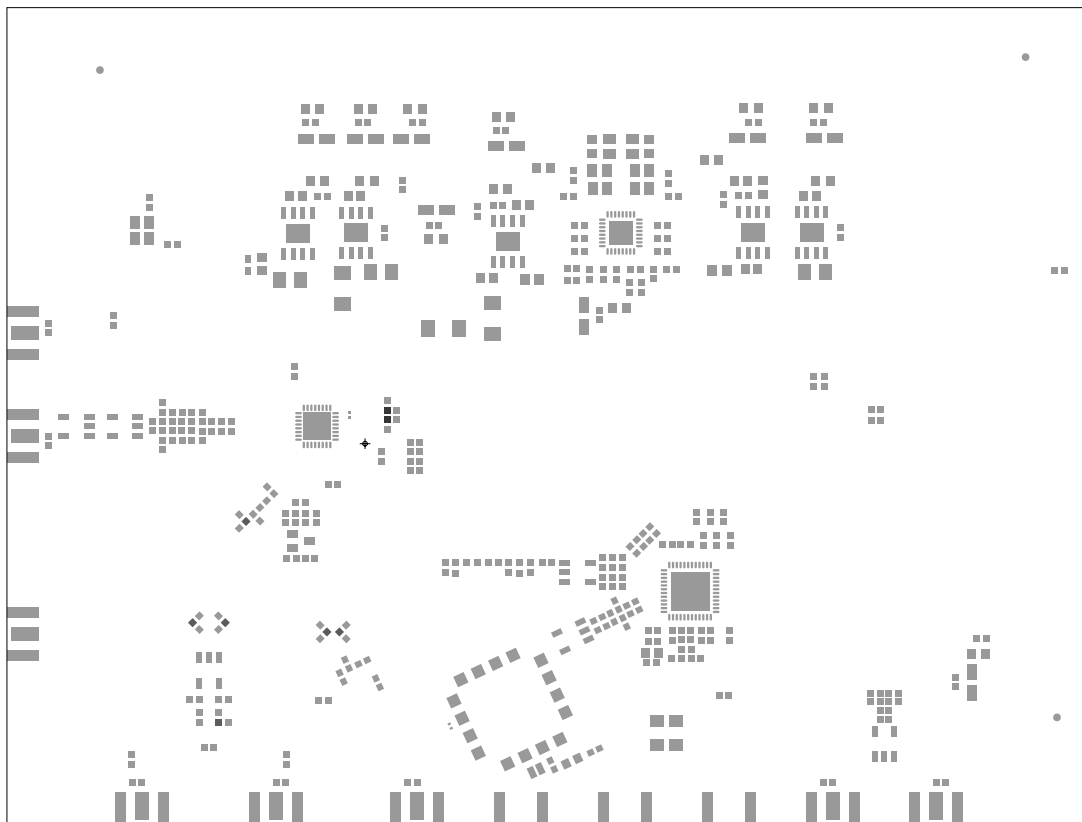
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PASTEMASK PRIMARY

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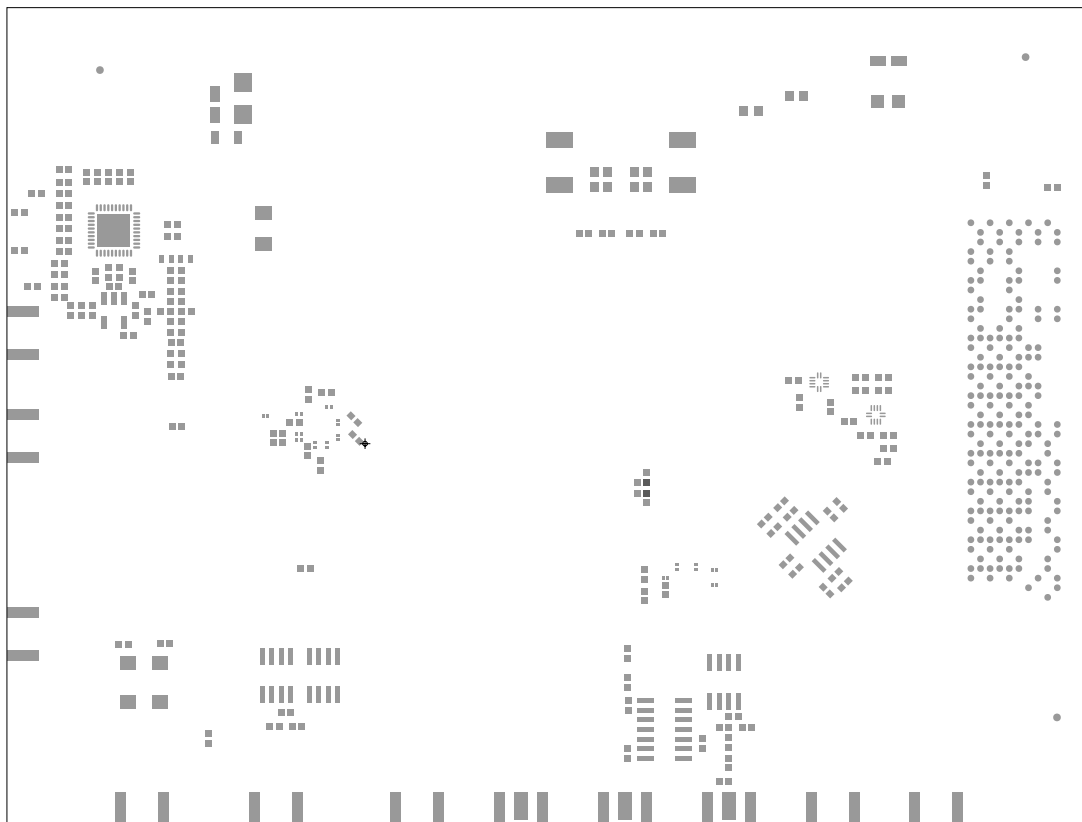
REV C



PASTEMASK SECONDARY

08-040310-13

REV C



040310  
REV C

+

SILKSCREEN SECONDARY  
08-040310-05  
REV C

