

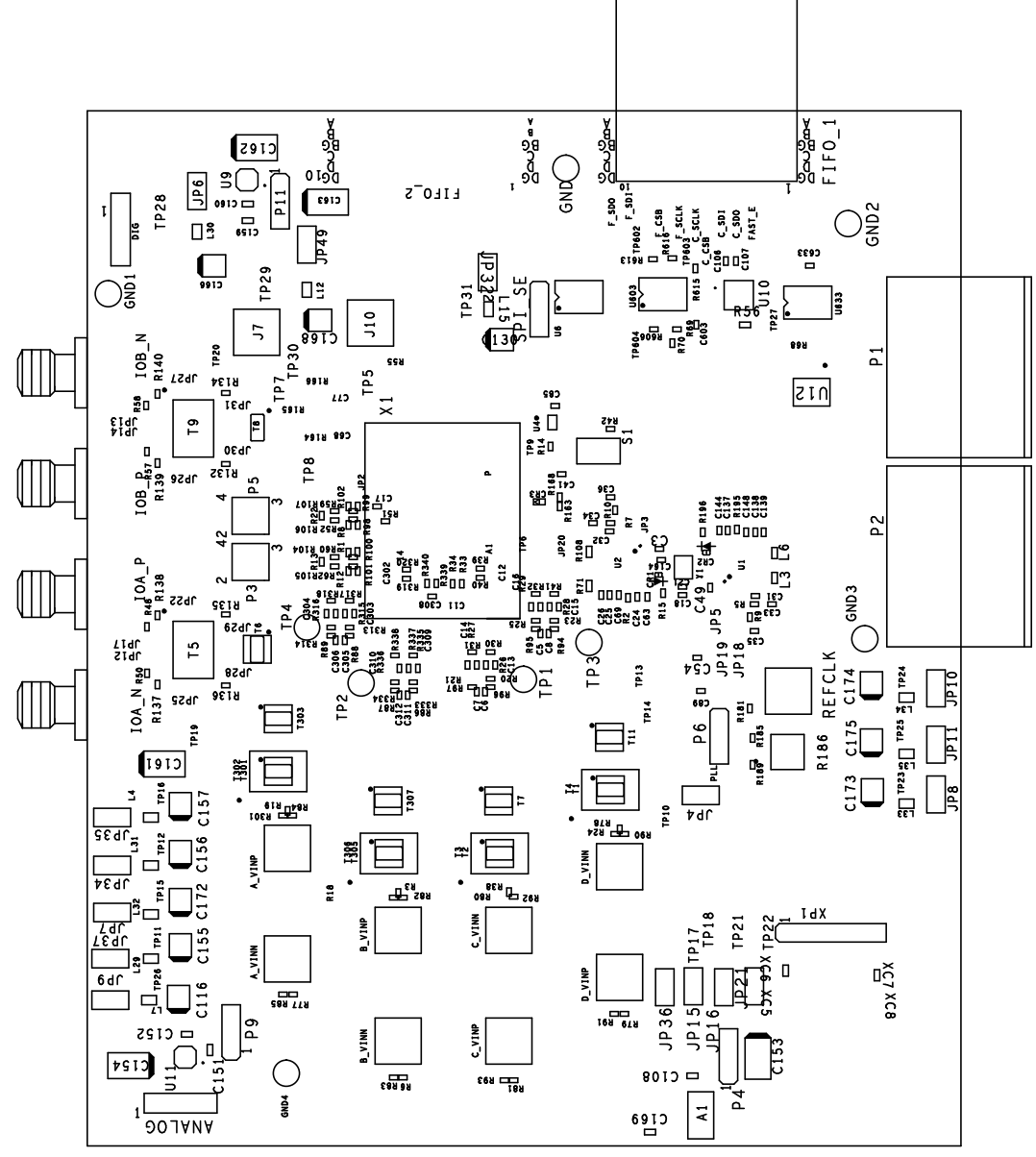
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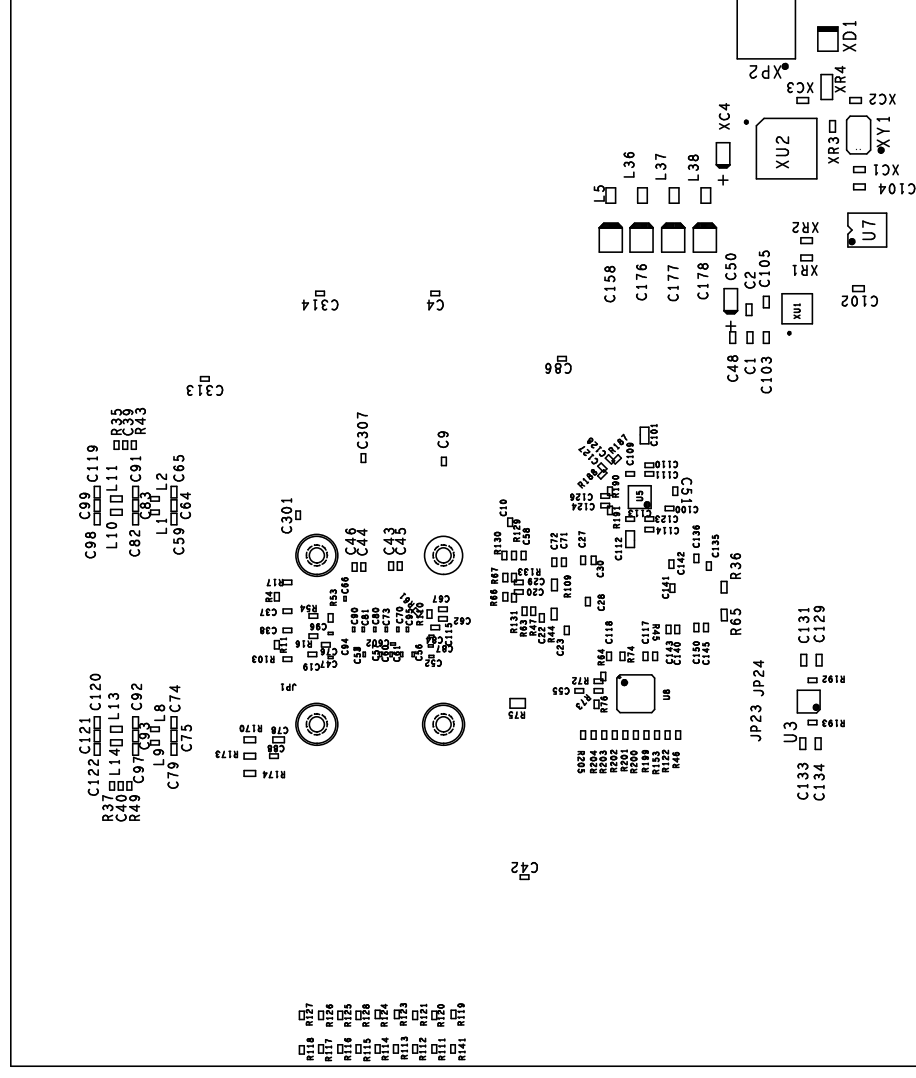
2

1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	16DEC11	H. N.
B	MINOR CHANGES	10MAY12	H. N.
C	ADD INDUCTOR PATH , IOA & IOB	21SEP12	H. N.
D	COMPONENT VALUE CHANGES	21MAR13	H. N.



PRIMARY SIDE



SECONDARY SIDE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES DECIMALS FRACTIONS ANGLES .XX .-.010 .-1/32 .-1/2 .XXX .-.005	ASSEMBLY		HSC DIVISION 804 WOBURN STREET WILMINGTON, MA 01887	
	APPROVAL	DATE	TITLE	
	DRAWN BY P. M. A.	16DEC11	AD9993	
	DESIGNED		EVALUATION BOARD	
	CHECKED		SIZE	FSCM NO
	APPROVED		C	HSC 11014
	MFG ENGINEER		SCALE	1/1
MATERIAL				
FINISH				
DO NOT SCALE DWG				

2

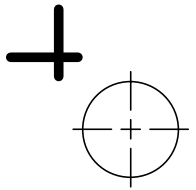
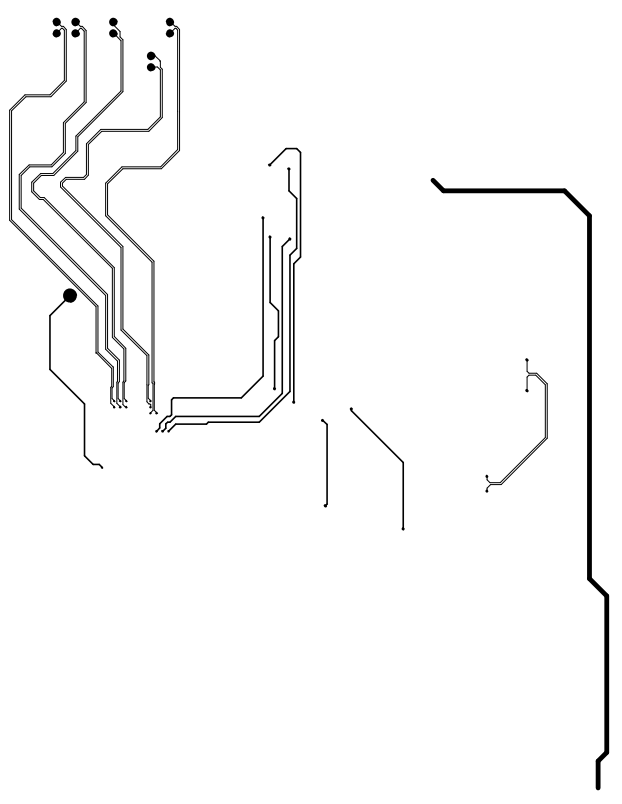
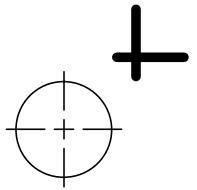
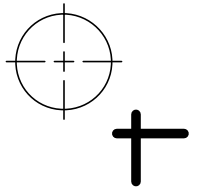
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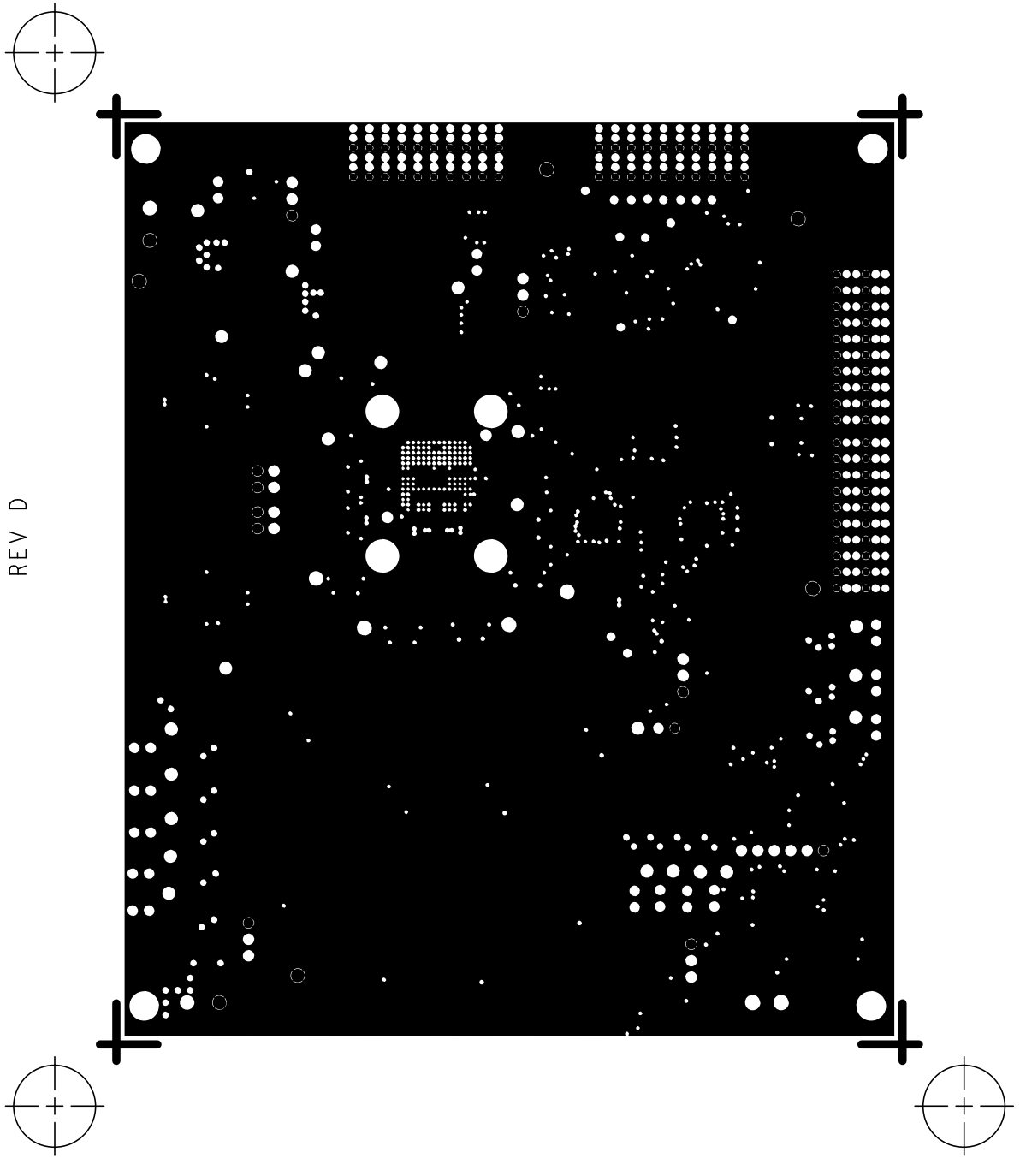
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SHEET 1 OF 1

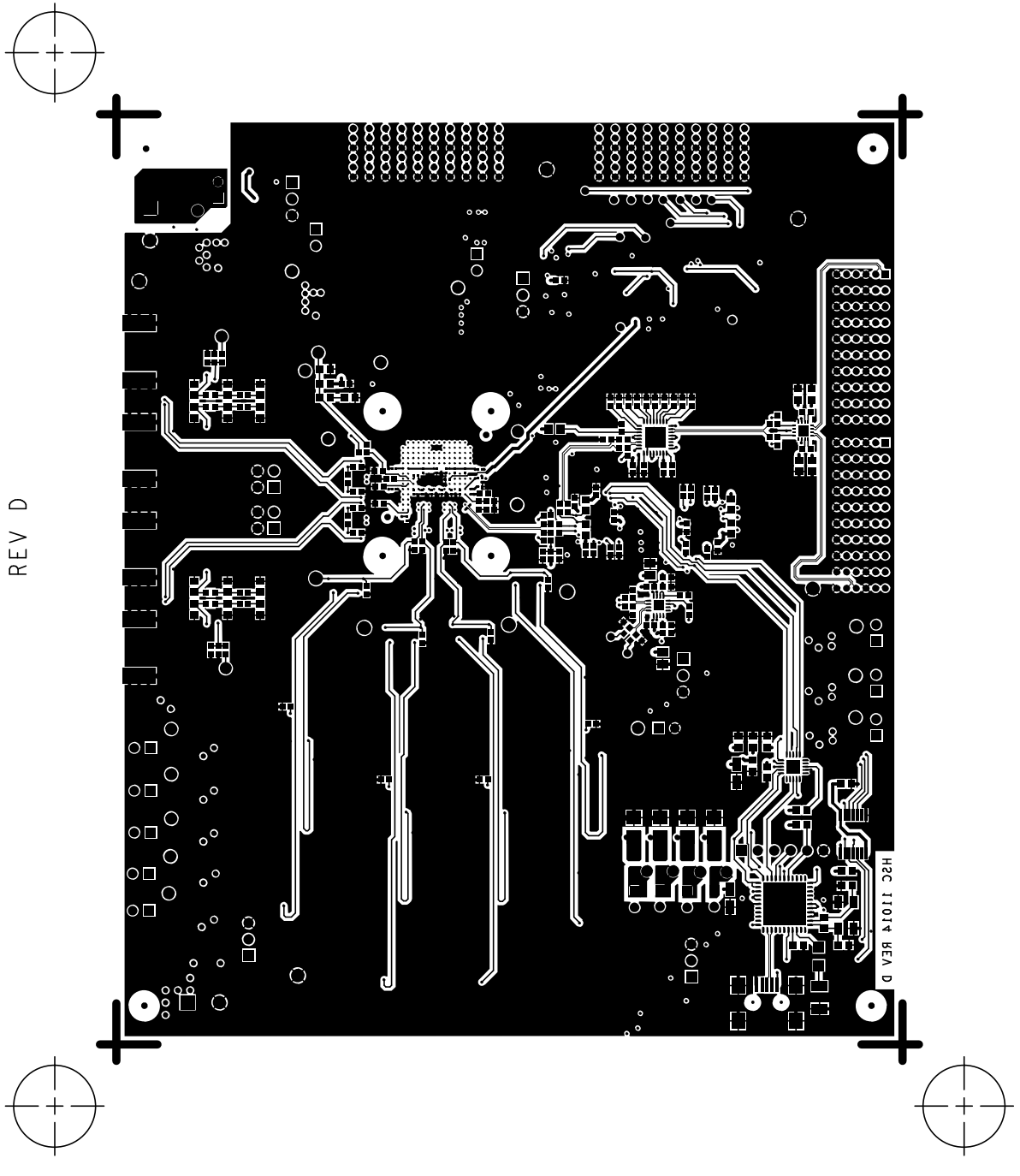
L10 SIGNAL  
HSC 11014  
REV D



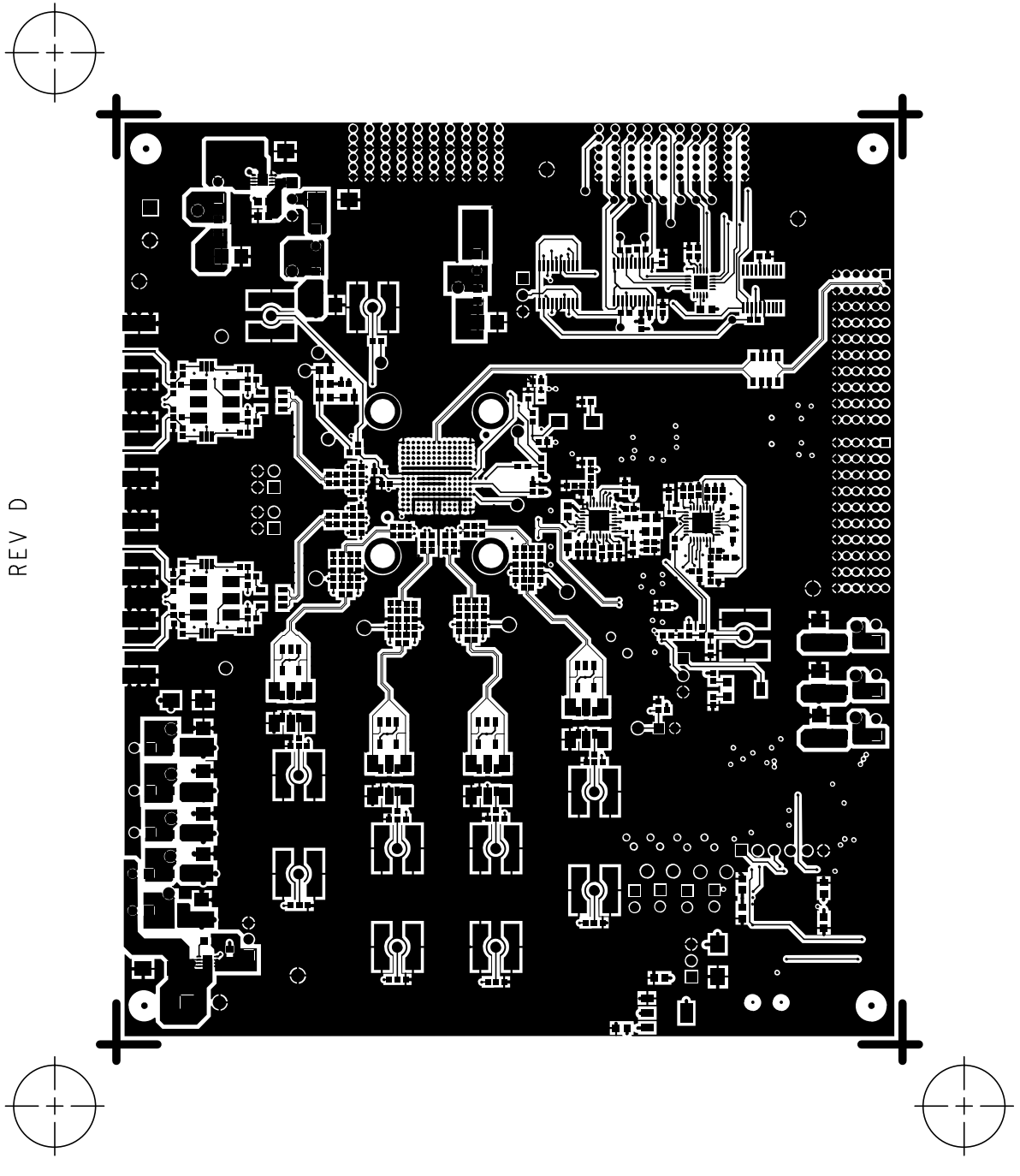
L11 GND  
HSC 11014  
REV D



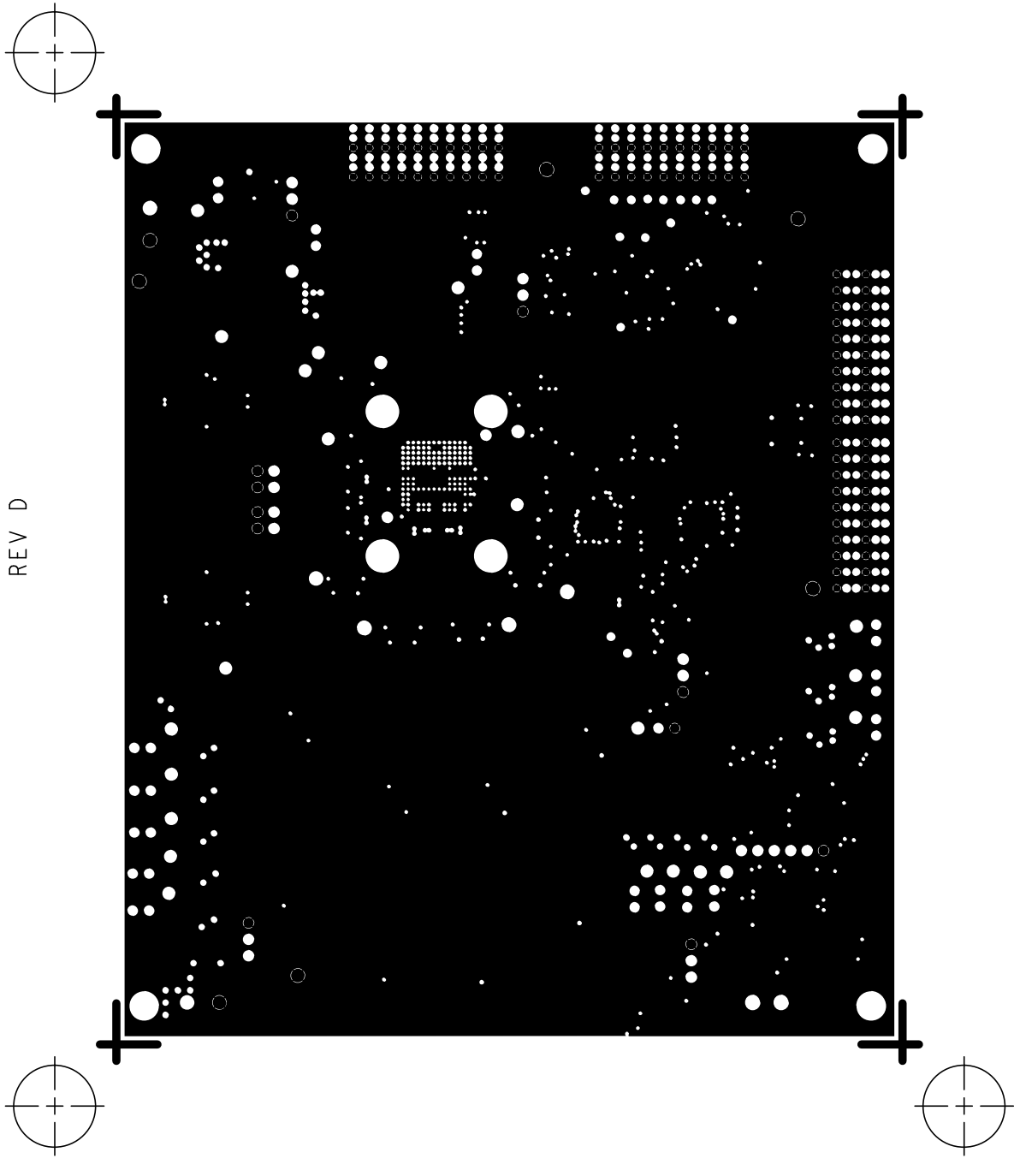
L112 SECONDARY  
HSC 11014  
REV D



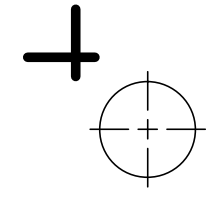
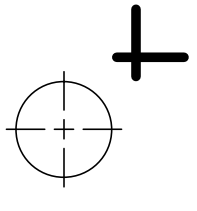
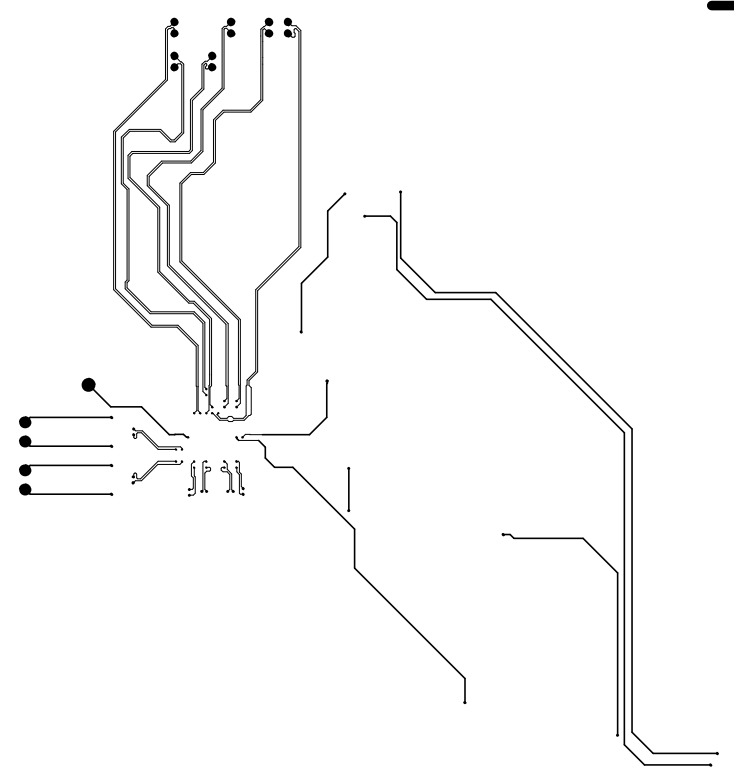
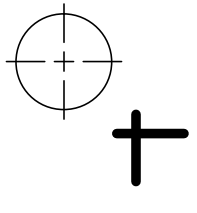
L1 PRIMARY  
HSC 11014  
REV D



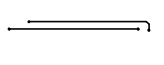
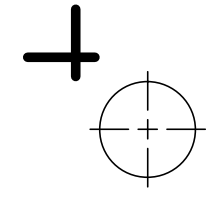
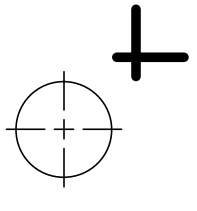
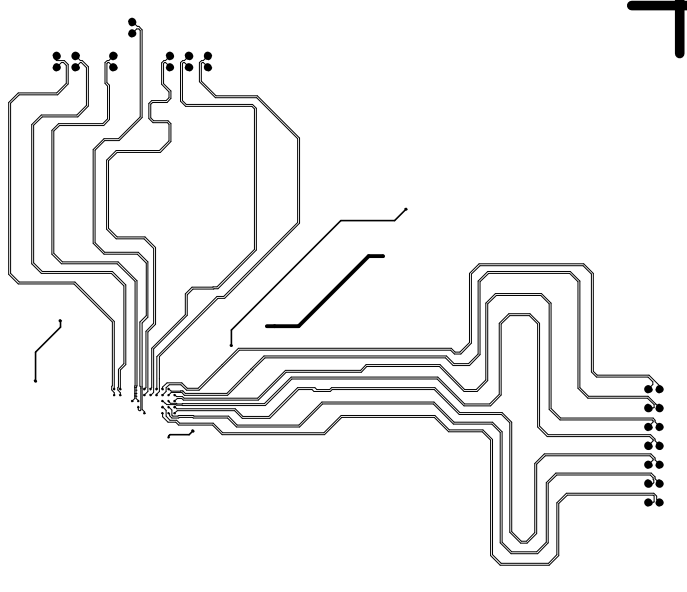
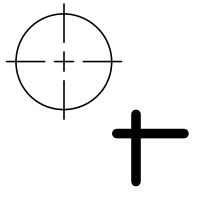
L2\_GND  
HSC\_11014  
REV\_D



L3 SIGNAL  
HSC 11014  
REV D

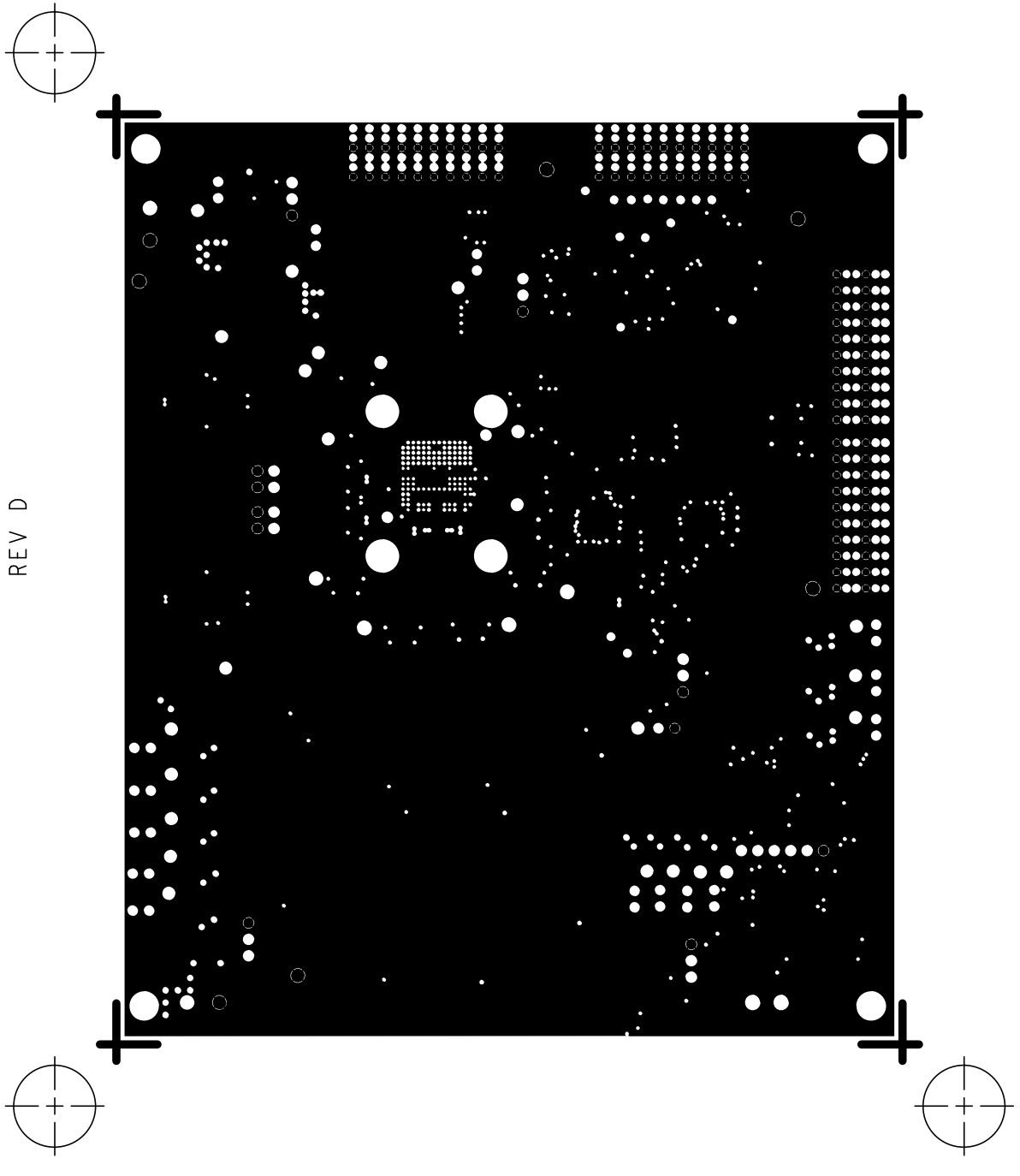


L4 SIGNAL  
HSC 11014  
REV D

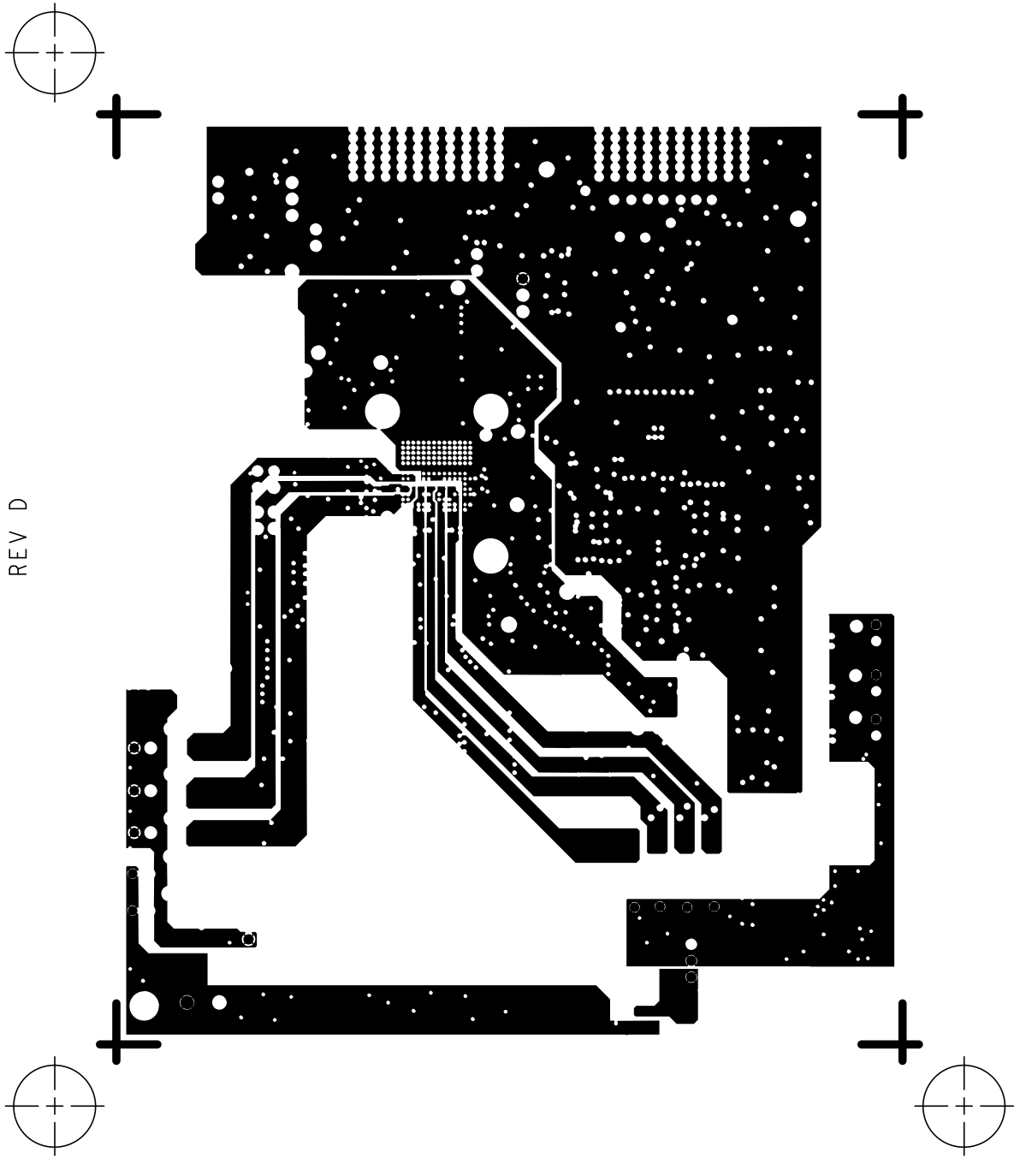




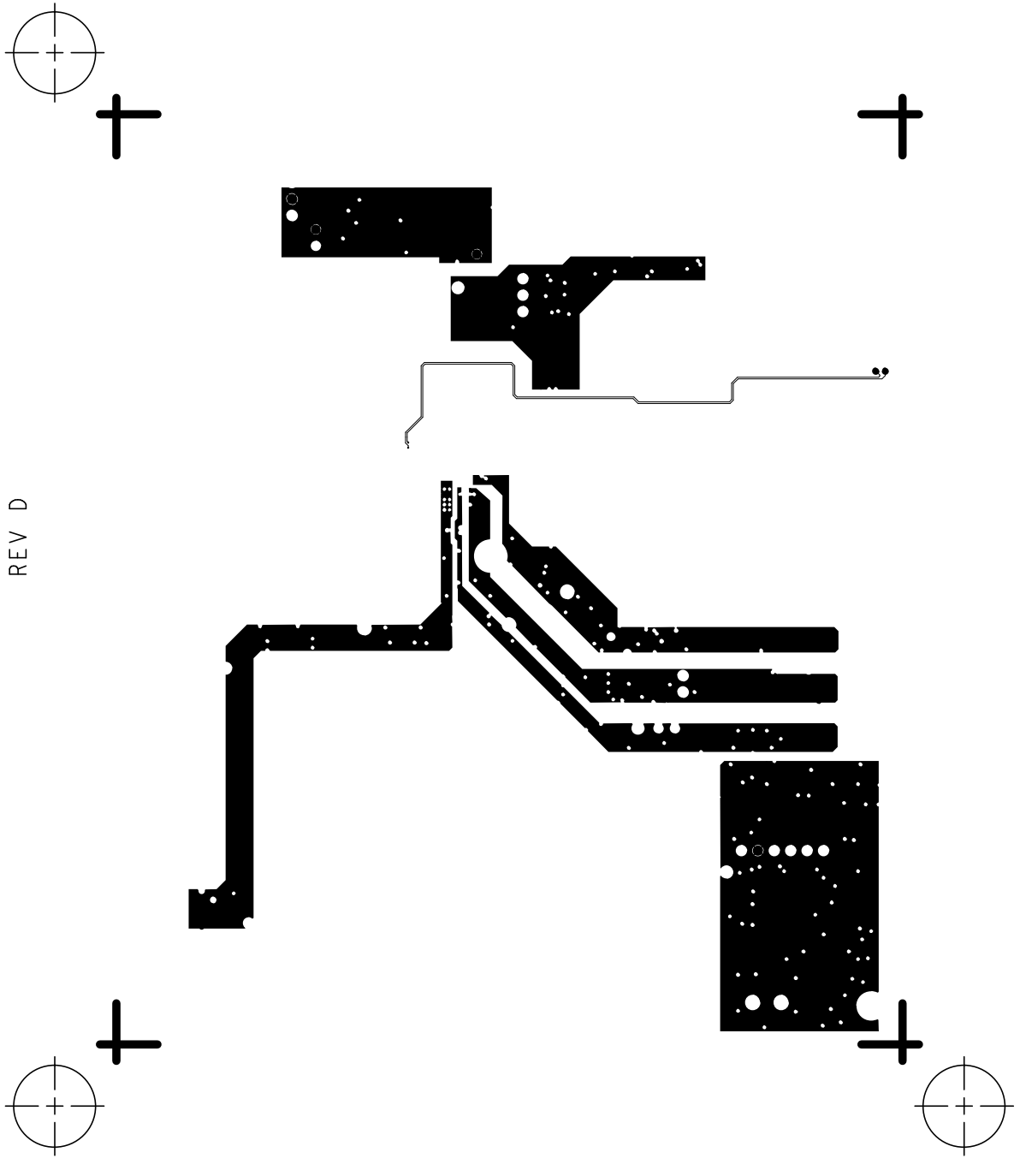
L5\_GND  
HSC 11014  
REV D



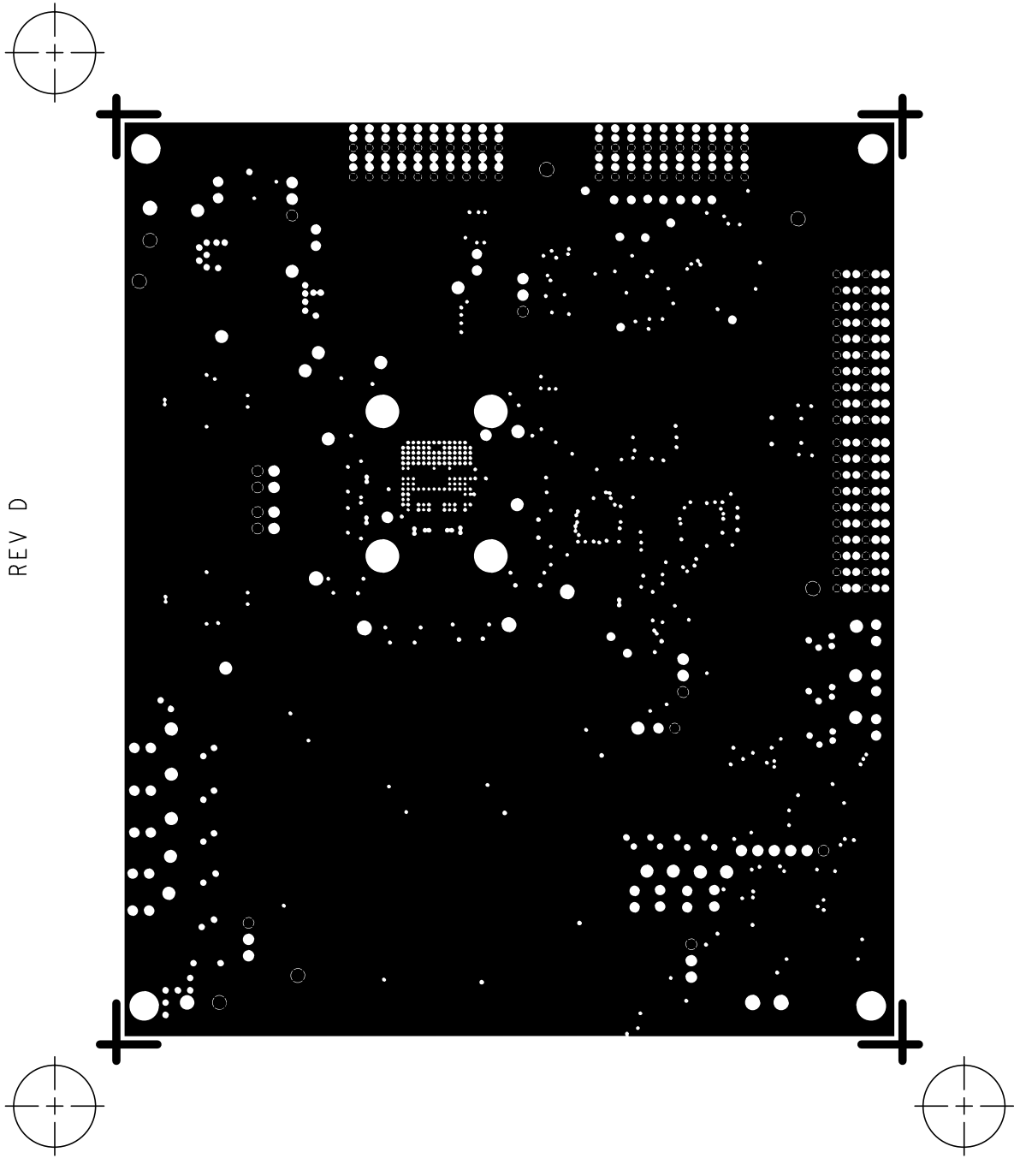
L6 PWR  
HSC 11014  
REV D



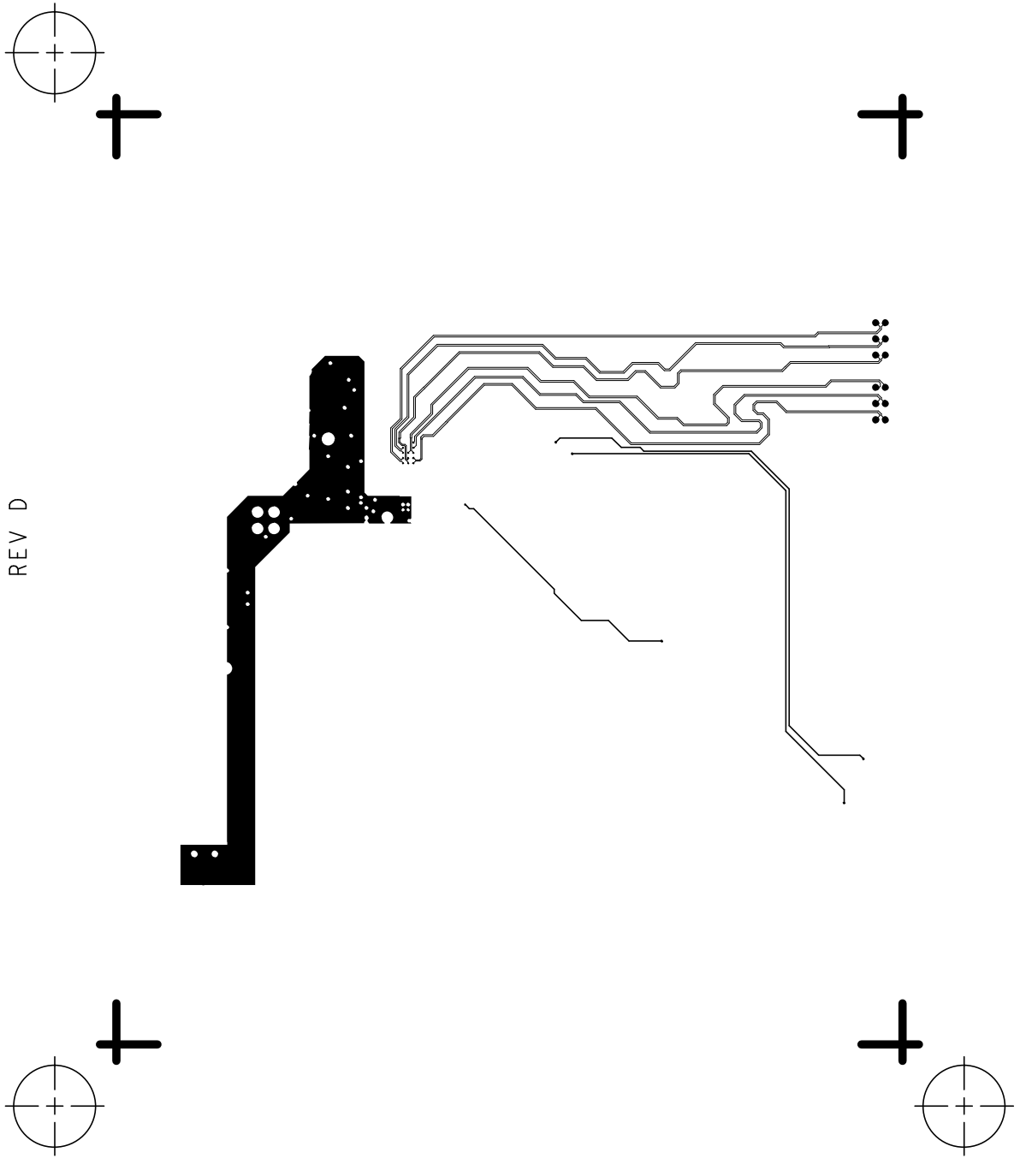
L7\_PWR  
HSC 11014  
REV D



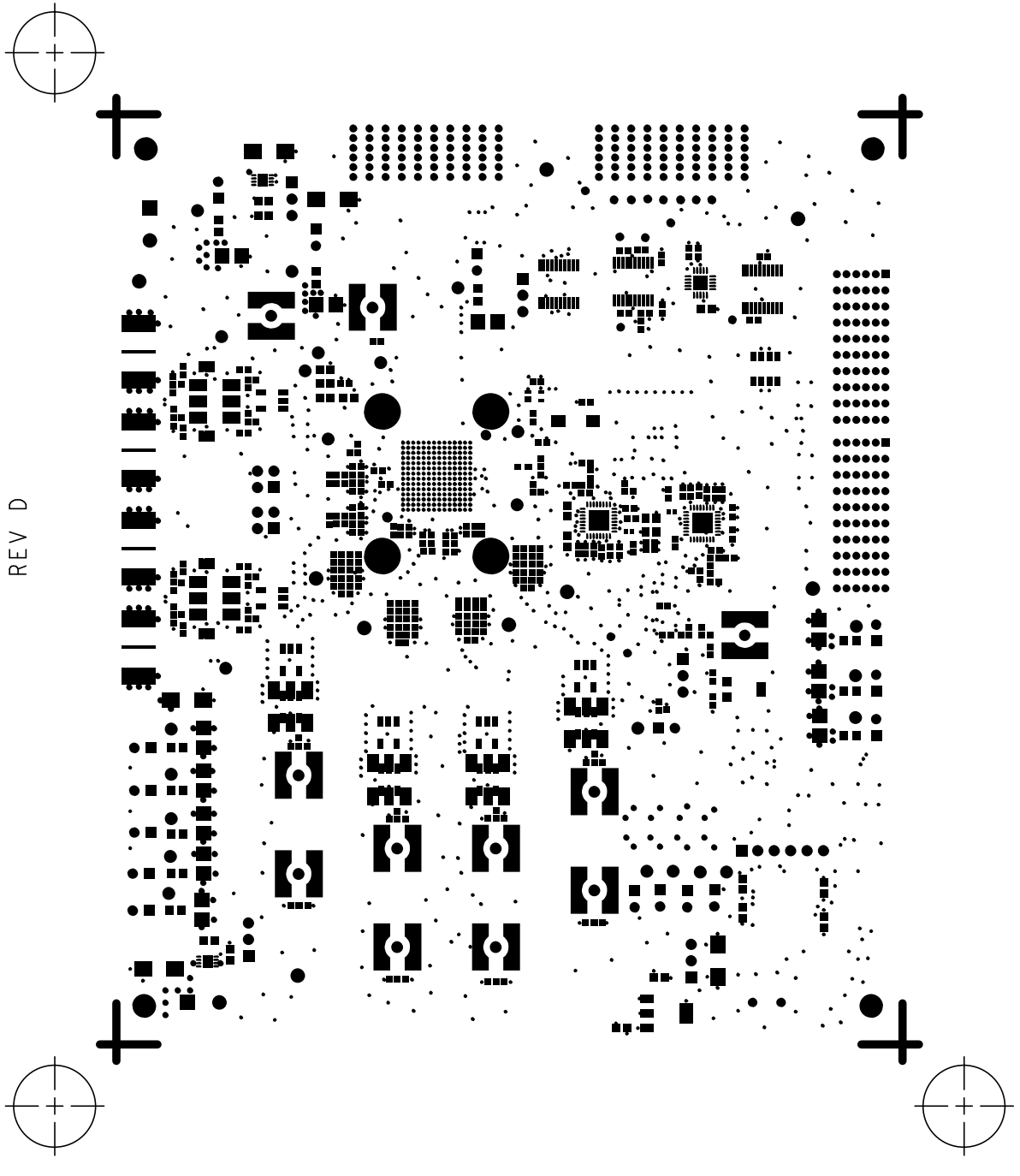
L8\_GND  
HSC\_11014  
REV\_D



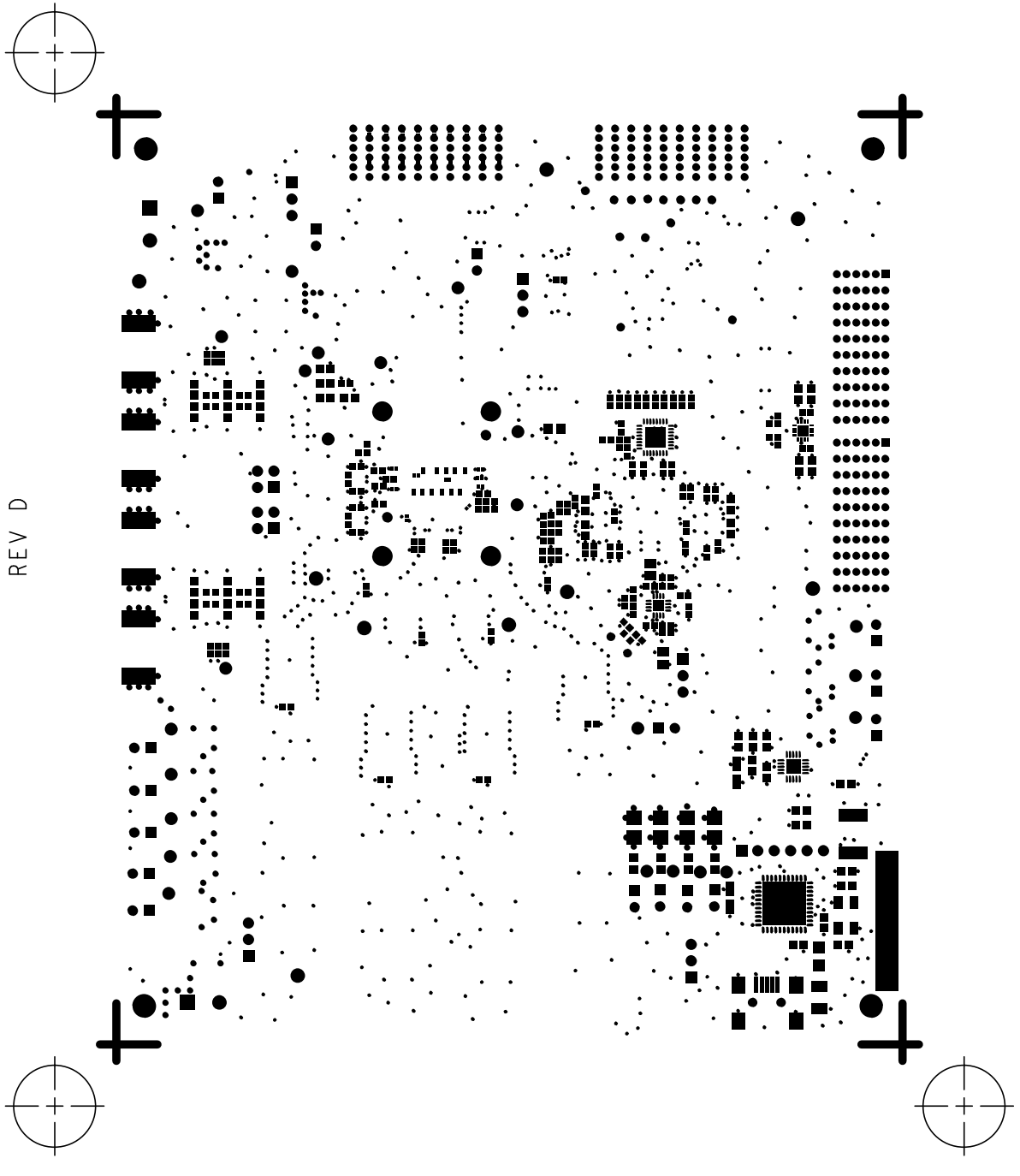
L9 SIGNAL  
HSC 11014  
REV D



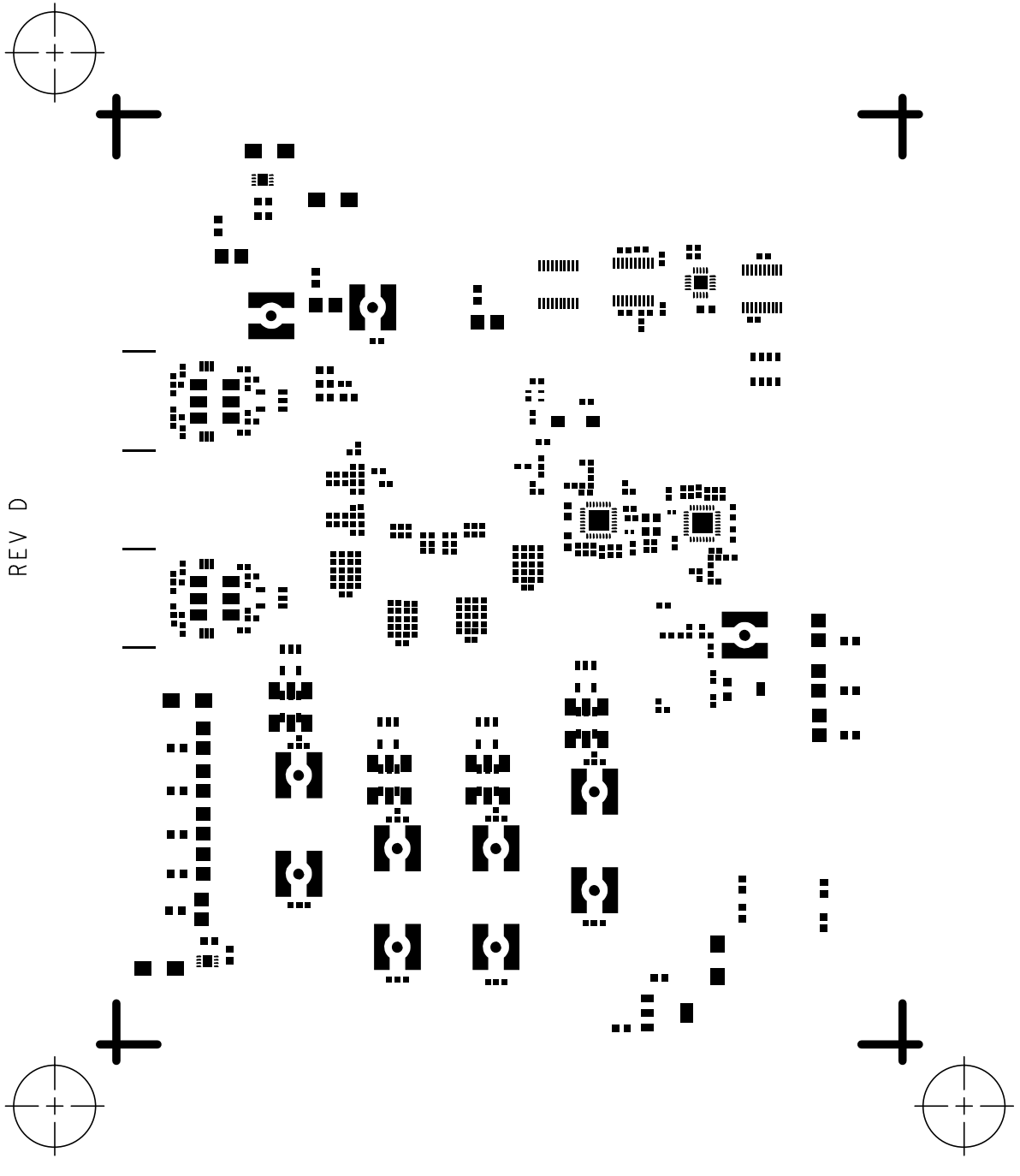
SOLDERMASK PRIMARY  
HSC 11014  
REV D



SOLDERMASK SECONDARY  
HSC 11014  
REV D

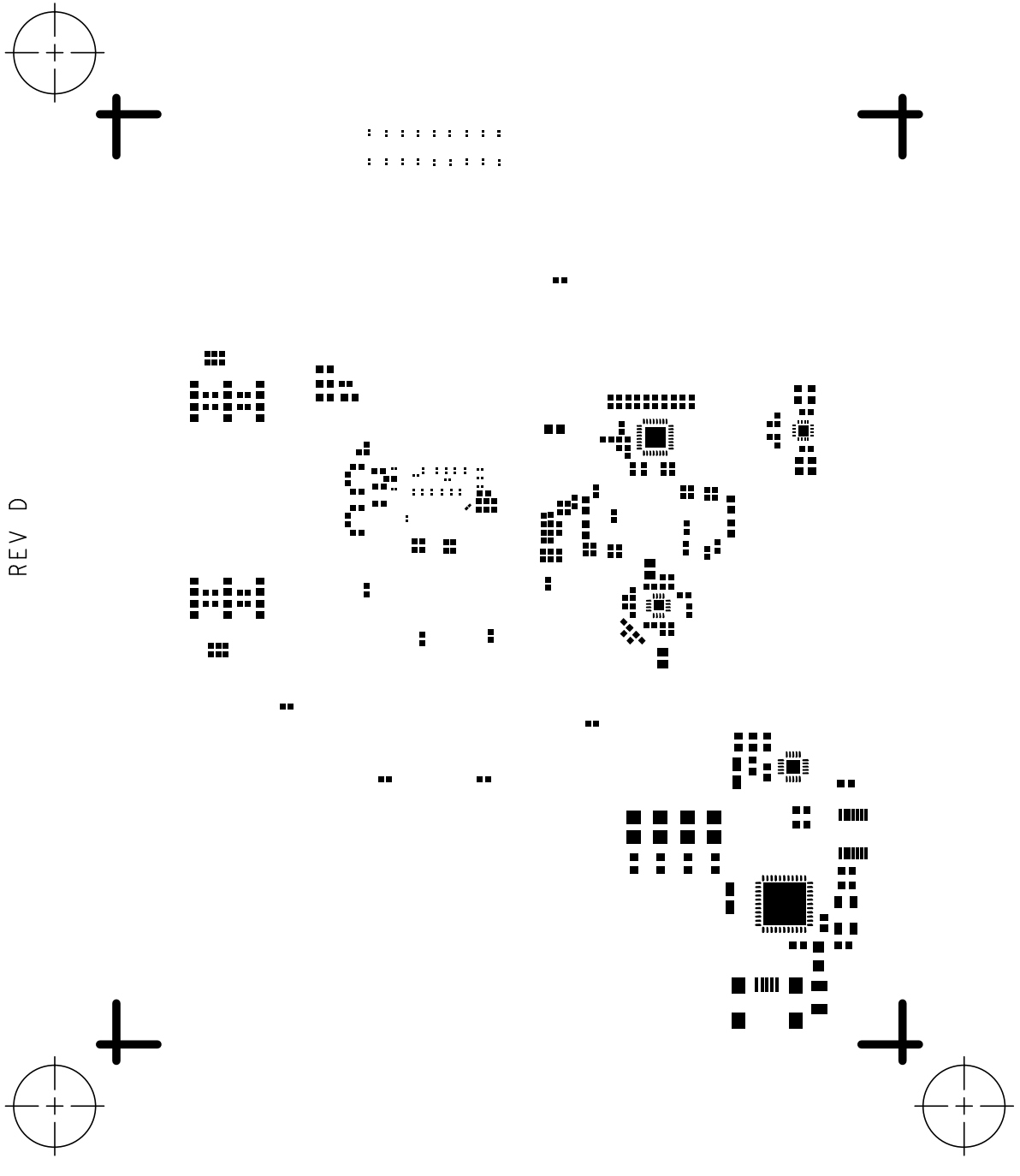


PASTEMASK PRIMARY  
HSC 11014  
REV D

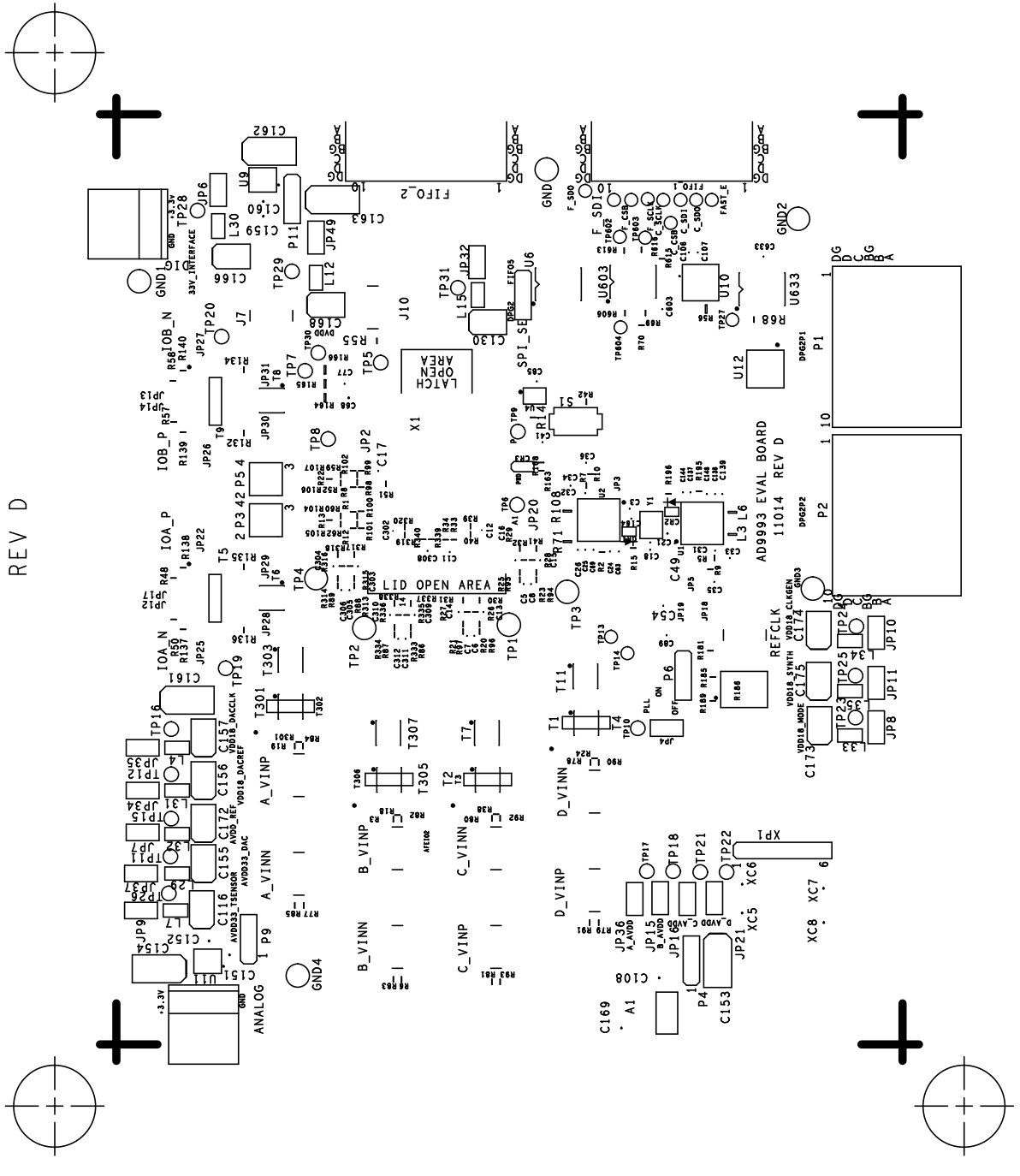




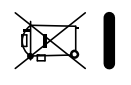
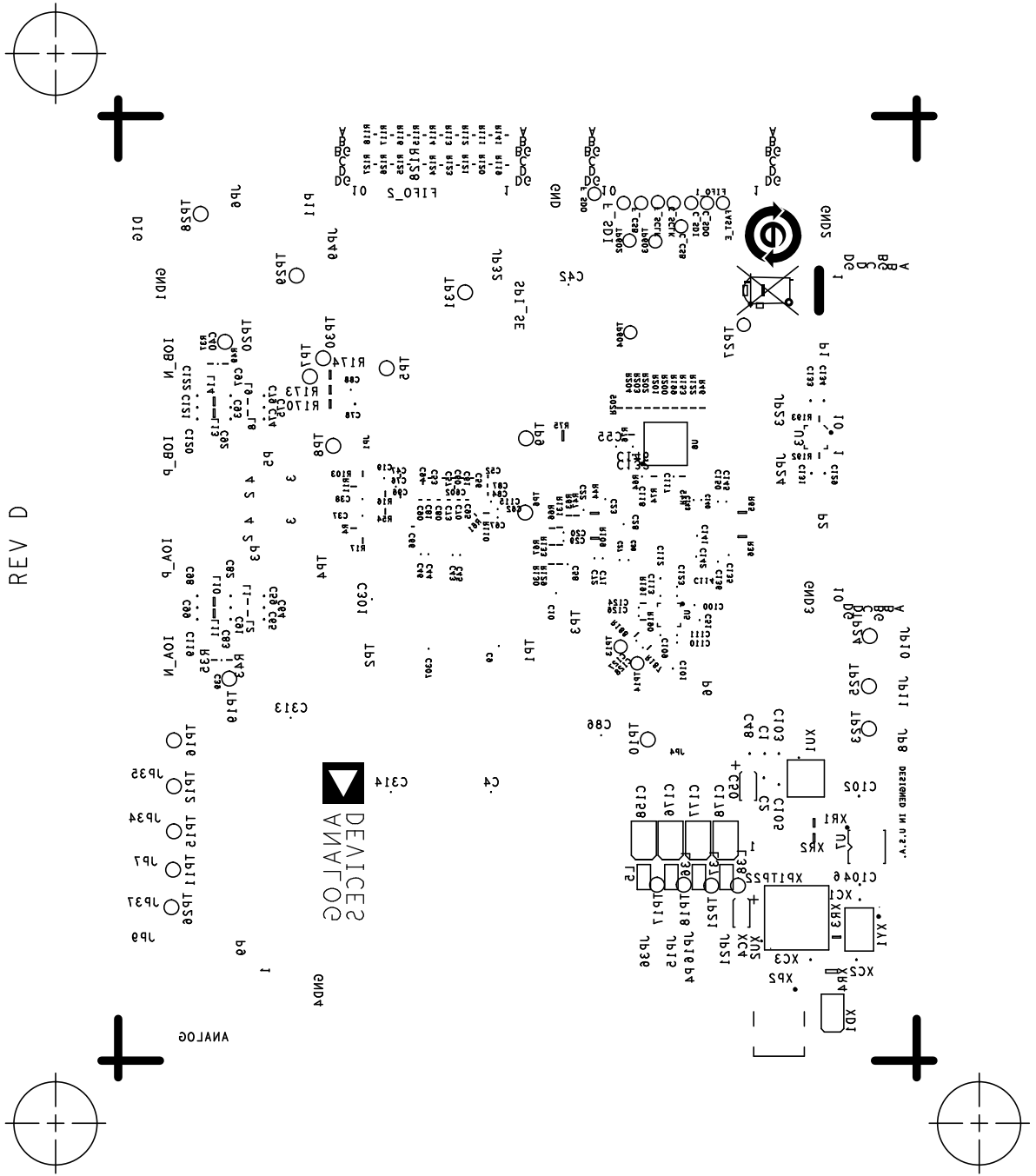
PASTEMASK\_SECONDARY  
HSC 11014  
REV D



SILKSCREEN PRIMARY  
HSC 11014  
REV D

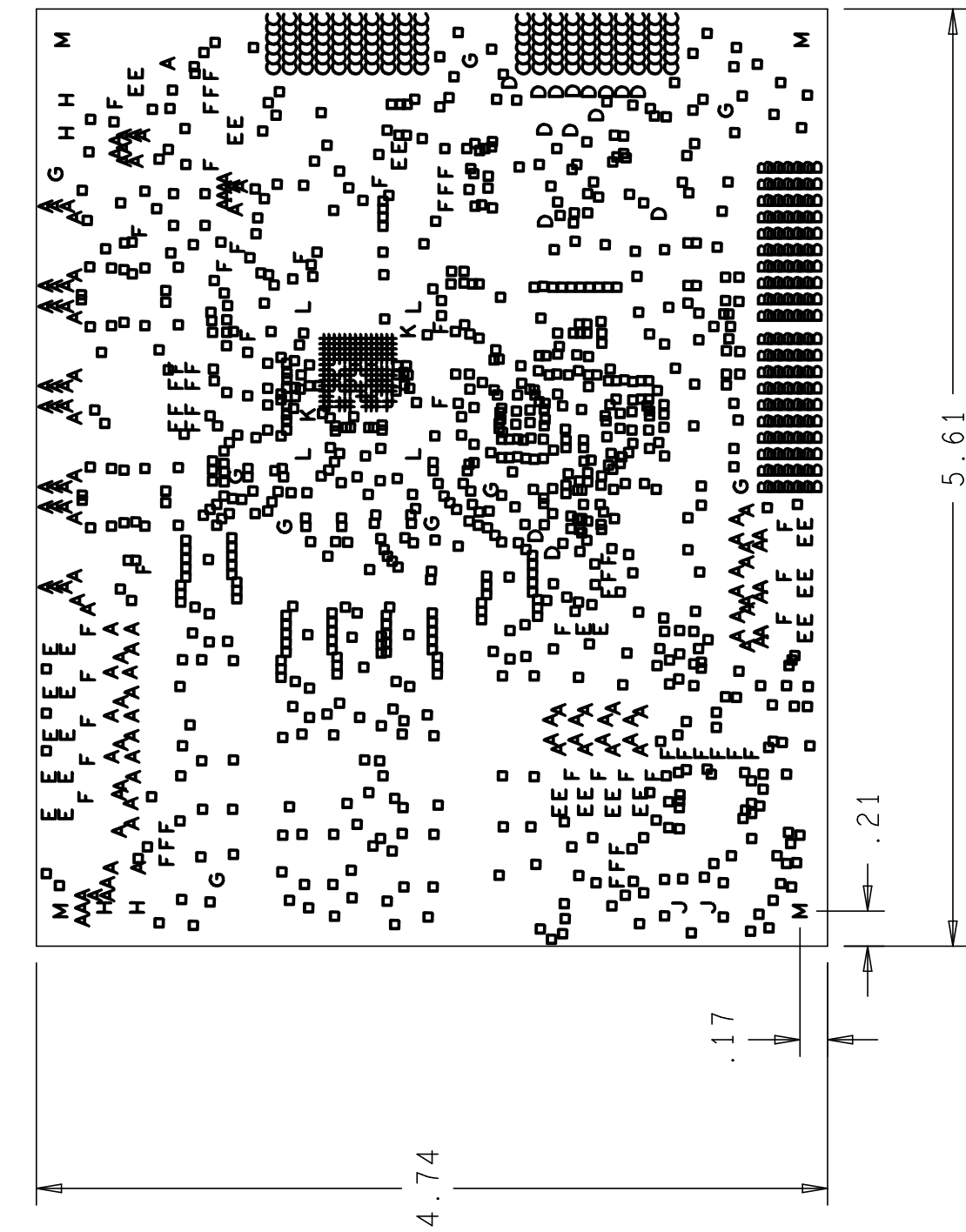


SILKSCREEN SECONDARY  
HSC 11014  
REV D



D

D



PRIMARY SIDE

12 LAYER STACKUP

PRIMARY SILKSCREEN
PRIMARY SOLDER MASK
PRIMARY SIDE (LAYER 1)
GROUND PLANE (LAYER 2)
INTERNAL SIGNAL (LAYER 3)
INTERNAL SIGNAL (LAYER 4)
GROUND PLANE (LAYER 5)
POWER LAYER (LAYER 6)
POWER LAYER (LAYER 7)
GROUND PLANE (LAYER 8)
INTERNAL SIGNAL (LAYER 9)
INTERNAL SIGNAL (LAYER 10)
GROUND PLANE (LAYER 11)
SECONDARY SIDE (LAYER 12)
SECONDARY SOLDER MASK
SECONDARY SILKSCREEN

NOMINAL FINISHED BOARD THICKNESS 0.063" +/- .007

CHARACTERISTIC IMPEDANCE = 50 OHMS +/- 10%  
ARTWORK LINE WIDTH FOR IMPEDANCE CONTROLLED LINES = 0.008" LAYERS 1,3,4,9,10, AND 12.  
DIFFERENTIAL IMPEDANCE = 100 OHMS +/- 10%  
ARTWORK LINE WIDTH FOR IMPEDANCE CONTROLLED LINES = 0.005" LAYERS 1,3,4,7,9,10, AND 12.

B

B

HOLE TOLERANCE

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

FINISHED HOLES IN MILS			
FIGURE	SIZE	PLATED	QTY
+	8.0	PLATED	152
□	10.0	PLATED	857
A	14.0	PLATED	112
B	25.0	PLATED	120
C	28.0	PLATED	120
D	30.0	PLATED	15
E	40.0	PLATED	32
F	45.0	PLATED	53
G	63.0	PLATED	9
H	65.0	PLATED	4
J	39.0	NON-PLATED	2
K	51.0	NON-PLATED	2
L	100.0	NON-PLATED	4
M	125.0	NON-PLATED	4

TOLERANCE/NOTES  
SEE NOTE 15  
SEE NOTE 15

A

A

REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	16DEC11	H.N.
B	MINOR CHANGES	10MAY12	H.N.
C	ADD INDUCTOR PATH ,IOA & IOB	21SEP12	H.N.
D	COMPONENT VALUE CHANGES	21MAR13	H.N.

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 1/2 OZ. COPPER, OVERPLATE TO 1 1/2 OZ. INTERNAL SIGNAL LAYERS 1 OZ. COPPER.  
 SOLDER MASK# SHALL BE BLUE LIQUID PHOTODUPLICABLE (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:

- REFER TO IPC-6010 SERIES (LATEST REV.). CLASS 2 FOR FABRICATION UNLESS OTHERWISE SPECIFIED.
- UNDIMENSIONED HOLES TO BE LOCATED WITHIN +/- .005 OF THEIR TRUE POSITION WITH RESPECT TO ARTWORK.
- PLATED HOLE WALL THICKNESS SHALL NOT BE LESS THAN .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 .004 INCH.
- BOARD/PANEL MUST MEET IPC-A-600 (LATEST REV.) CLASS 2 FOR FLATNESS.
- 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  
D. MFR. LOGO  
E. SUCCESSFUL ELECTRICAL BOARD TEST.
- B. DATE CODE (STAMP)  
C. FLAMMABILITY RATING
- NON-FUNCTIONAL PADS MAY BE REMOVED FROM INNER SIGNAL LAYERS AT MFR. DISCRETION.
- IF PAD SIZES PROVIDED ARE NOT LARGE ENOUGH TO MAINTAIN ANNULAR RING REQUIREMENT, MFR. MAY TEAR DROP PADS TO MAINTAIN ANNULAR RING AT PAD TO CIRCUIT INTERFACE ONLY AND MUST INSURE ELECTRICAL INTEGRITY.
- REPAIRS PER IPC-R-700 ARE ALLOWED.
- MODIFICATIONS TO THE ARTWORK, OTHER THAN THOSE DESCRIBED ON THE FABRICATION DRAWING, ARE NOT ALLOWED WITHOUT WRITTEN AUTHORIZATION.
- FINISH: SURFACES SHALL HAVE ENIG FINISH PLATED WITH 2-6 MICROINCHES OF IMMERSION GOLD OVER 100-200 MICROINCHES OF ELECTROLESS NICKEL. INDICATED VIAS TO BE NON-CONDUCTIVE EPOXY FILLED AND GROUND FLUSH WITH PADS, COMPONENT SIDE.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		NCDRILL		HSC DIVISION 804 WOBURN STREET WILMINGTON, MA 01887	
DECIMALS	FRACTIONS	APPROVAL	DATE	TITLE	
.XX	XX	DRAWN BY P. M. A.	16DEC11	AD9993	
.XXX	XX	DESIGNED		EVALUATION BOARD	
.XXX	XX	CHECKED		SIZE FSCM NO DRAWING NUMBER	
		APPROVED		C	HSC 11014
		MFG ENGINEER		SCALE 1/1	SHEET 1 OF 1