

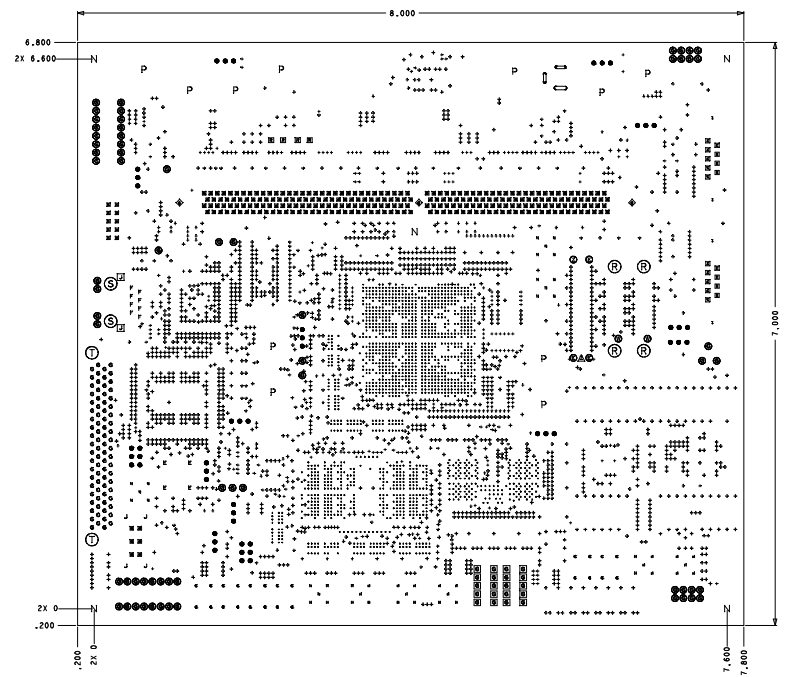
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REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	02/25/04	

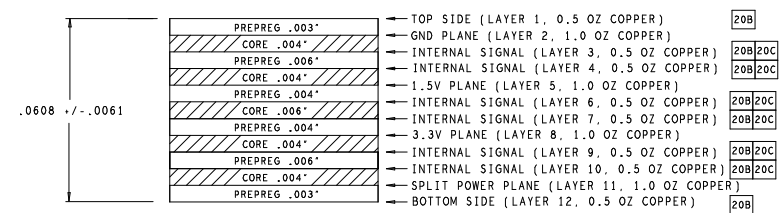
CONTROLLED IMPEDANCE TABLE (ONLY VALUES SPECIFIED ARE APPLICABLE)						
TRACE SPACING	TARGET Z/ OHMS +/- 10%	SUPPLIED CAD DATA TRACE WIDTH				
		MICROSTRIP	EMBEDDED MICROSTRIP	STRIPLINE	DUAL STRIPLINE	
SINGLE-ENDED	50	.005	###	###	.005	Z0B
EDGE COUPLED DIFFERENTIAL PAIR	100	###	###	###	.00425	Z0C
EDGE COUPLED DIFFERENTIAL PAIR	###	###	###	###	.00575	

NOTES UNLESS OTHERWISE SPECIFIED:

- ALTERA PCB PART NUMBER: P/N 100-0310112-01 REV.A.
- THIS DRAWING IS VIEWED FROM THE PRIMARY OR TOP SIDE OF PCB.
- FABRICATION OF THIS PCB SHALL BE IN CONFORMANCE WITH THE FOLLOWING SPECIFICATIONS: IPC-6011 CLASS 2 (GENERIC).
- FABRICATION OF THIS PCB TO BE ACCEPTABLE TO IPC-A-600 CLASS 2 (LATEST REVISION).
- ALL DIMENSIONAL LIMITS APPLY AFTER PLATING OR PROCESSING.
- TOLERANCES OF DATUM HOLE TO: BOARD EDGE LOCATIONS +/- 0.010.  
DRILLED HOLE LOCATIONS +/- 0.003.  
V-SCORE LOCATIONS +/- 0.010 (IF APPLICABLE).
- BASE MATERIAL: FR4 GLASS EPOXY, MIN. Tg OF 170 DEGREES C.
- FLAME CLASS: UL 94V-0 & MUST MEET REQUIREMENTS OF UL796.
- MANUFACTURER MUST BE UL RECOGNIZED TO PRODUCE THIS PRODUCT SUCH THAT IT MEETS 170 DEGREES CELSIUS MAXIMUM OPERATING TEMPERATURE (MOT).
- THE FOLLOWING MUST BE MARKED OR ETCHED ON SECONDARY SIDE OF PCB IN AREA SHOWN: DATE CODE, UL RECOGNIZED VENDOR ID, UL TYPE DESIGNATION AND/OR MARKINGS WHICH REFLECT THE SPECIFIED FLAME CLASS AND MAXIMUM OPERATING TEMPERATURE RATINGS.
- BOW & TWIST SHALL BE DETERMINED BY PHYSICAL MEASUREMENT AND PERCENTAGE CALCULATION IN ACCORDANCE WITH IPC-TM-650, METHOD 2.4.22. BOW AND TWIST MAY NOT EXCEED 0.7%.
- HOLE/SLOT PLATING = 0.001 MIN. AVERAGE / 0.0008 ABSOLUTE MIN. PLATING. HOLE/SLOT DIAMETERS ARE SPECIFIED AFTER PLATING (SEE HOLE SCHEDULE).
- SMEAR REMOVAL SHALL NOT ETCHBACK GREATER THAN 0.001.
- INTERNAL ANNULAR RING 0.001 MINIMUM. EXTERNAL ANNULAR RING 0.002 MINIMUM. BOTH ARE MEASURED AT LINE TO PAD ENTRY. NON-FUNCTIONAL INNER LAYER PADS MAY BE REMOVED. SNOWMAN/TEAR DROPPING OF TRACE TO PAD JUNCTION IS PERMITTED PROVIDED MINIMUM METAL-TO-METAL ARTWORK SPACINGS ARE NOT COMPROMISED.
- FINISHED CONDUCTOR WIDTH NOT TO BE REDUCED MORE THAN 20% OF MINIMUM WIDTH FROM ARTWORK SUPPLIED. FINISHED CONDUCTOR SPACING NOT TO BE REDUCED MORE THAN 20% OF MINIMUM SPACING FROM ARTWORK SUPPLIED.
- SOLDER MASK IS LIQUID PHOTO IMAGEABLE WITH GLOSSY FINISH AND COLORED GREEN ACCORDANCE WITH IPC-SM-840C CLASS T. REGISTRATION TO BE WITHIN +/-0.003 OF ITS RESPECTIVE OUTER CIRCUIT LAYERS. VENDOR MAY ADJUST SOLDERMASK WHEREVER SOLDERMASK PAD ARE THE SAME SIZE (1:1) TO PROVIDE UP TO .003" MAXIMUM CLEARANCE FROM MASK TO PAD PROVIDED NO ADJACENT COPPER IS EXPOSED AND NO CONFLICT IS PRODUCED WITH ANY STATED "VIA TENTING/PLUGGING" REQUIREMENTS (IF APPLICABLE). NOTE THAT THERE ARE AREAS ON PRIMARY SIDE THAT ARE CLEAR OF SOLDERMASK. SECONDARY SIDE WILL REQUIRED VIAS TO BE EXPOSED.
- FINISH IS SOLDER MASK OVER BARE COPPER (SMOBC) BOTH SIDES WITH 150 MICRO INCHES MINIMUM ELECTROLESS NICKEL (Ni) FOLLOWED BY 3-8 MICRO INCHES IMMERSION GOLD (Au).
- SILKSCREEN USING WHITE NONCONDUCTIVE INK. NO INK TO APPEAR ON EXPOSED COPPER SUCH AS PLATED THROUGH HOLE PADS AND SURFACE MOUNT LANDS. INK ON SOLDER MASK COVERED PADS IS PERMISSIBLE. CLIPPING OF SILKSCREEN 0.008 MAX. FROM PADS IS PERMITTED IF REQUIRED.
- 100% CONTINUITY AND ISOLATION ELECTRICAL TESTING PER CURRENT IPC TEST METHODS REQUIRED FOR EVERY PCB. FINAL PCB TEST DATA MUST BE CROSS-REFERENCED TO IPC-D-356 FILE, NEUTRAL FILE OR NETLIST PROVIDED.
- CONTROLLED IMPEDANCE LINES ARE AS FOLLOWS:  
a) TOLERANCE (ALL LINES) +/- 10%.  
b) SINGLE ENDED TRACES TO BE 50 OHMS.  
c) EDGE COUPLED DIFFERENTIAL TRACES TO BE 100 OHMS.
- VENDOR TO PROVIDE ONE TEST COUPON AND ONE CROSS SECTION PER LOT WITH SHIPMENT.
- VENDOR TO PROVIDE 2 SOLDER SAMPLES WITH FIRST SHIPMENT.
- DETAILS NOT SPECIFIED ARE AT MANUFACTURER'S OPTION, HOWEVER FINAL APPROVAL MUST BE OBTAINED.
- THESE HOLES MAY BE PLATED SHUT OR SOLDER FILLED.
- PLUG VIA HOLES FROM PRIMARY SIDE WITH SR-1000 OR EQUIVALENT MATERIAL. CLEAR UV MASK IS ACCEPTABLE. PLUG HEIGHT NOT TO EXCEED 0.003 OVER FINISHED PLATING HEIGHT.
- COPPER THIEVING SHALL BE APPLIED WHEREVER REQUIRED BUT MUST HAVE A SPACING OF 100 MILS FROM ANY OTHER COPPER FEATURE ON THE BOARD.
- REMOVE ALL UNCONNECTED VIA PADS IN INNER LAYERS.
- DELIVERY, PROVIDE 6 BOARDS TO ALTERA AND 2 BOARDS TO FLEXTRONICS FOR SMT AND THERMAL TESTING.



DRILL CHART				
ALL UNITS ARE IN INCHES				
FIGURE	SIZE	TOLERANCE	PLATED	QTY
24	0.010	+0.003/-0.010	PLATED	1644
24	0.012	+0.003/-0.012	PLATED	2503
□	0.028	+/-0.003	PLATED	246
□	SLOT .030x.120	+/-0.003	PLATED	1
□	SLOT .120x.030	+/-0.003	PLATED	1
○	0.031	+/-0.003	PLATED	3
□	0.032	+/-0.003	PLATED	4
□	0.034	+/-0.003	PLATED	80
□	0.035	+/-0.003	PLATED	8
□	0.036	+/-0.003	PLATED	20
□	0.039	+/-0.003	PLATED	24
○	0.040	+/-0.003	PLATED	65
□	SLOT .150x.040	+/-0.003	PLATED	1
□	0.041	+/-0.003	PLATED	18
□	0.043	+/-0.003	PLATED	10
□	0.045	+/-0.003	PLATED	48
□	0.060	+/-0.003	PLATED	4
□	0.062	+/-0.003	PLATED	2
□	0.065	+/-0.003	PLATED	4
□	0.067	+/-0.003	PLATED	45
□	0.096	+/-0.003	PLATED	3
□	0.120	+/-0.003	PLATED	4
N	0.125	+/-0.003	PLATED	5
P	0.170	+/-0.003	PLATED	11
○	0.028	+/-0.003	NON-PLATED	1
▲	0.033	+/-0.003	NON-PLATED	1
○	0.067	+/-0.003	NON-PLATED	2
⊖	0.106	+/-0.003	NON-PLATED	2
⊖	0.126	+/-0.003	NON-PLATED	2
⊖	0.138	+/-0.003	NON-PLATED	4



LAYER STACK-UP DETAIL  
COPPER THICKNESSES ARE PRIOR TO PLATING  
SCALE: NONE

DO NOT SCALE DRAWING	DRAWN FLEXTRONICS	DATE 06/03/02		
THIS DOCUMENT CONTAINS INFORMATION CONSIDERED PROPRIETARY, AND SHALL NOT BE REPRODUCED WHOLLY OR IN PART, NOR DISCLOSED TO OTHERS WITHOUT SPECIFIC WRITTEN PERMISSION	CHECKED		DESCRIP	
MATERIAL	MECH ENG		FAB DRAWING	
SEE NOTES	PROJ ENG		STRATIX MEMORY BOARD II	
REMOVE ALL BURRS AND SHARP EDGES	MFG ENG		CODE IDENT	SIZE D
			DRAWING NO.	REV A
			140-0310112-01	
			SCALE: NONE	SHEET 1 OF 1
NEXT ASSY P/N	MODEL	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES AND INCLUDE PLATING AND DR PAINT. DECIMAL FRACTION ANGLE ± 1°		
		.XXX ± .005 ± .01		

DWG NO. 140-0310112-01 1 A REV.

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