

NOTES: UNLESS OTHERWISE SPECIFIED

1. THE FINISHED PRINTED WIRING BOARD SHALL MEET THE REQUIREMENTS OF IPC-A-600-X (LATEST REVISION).
2. THIS DOCUMENT AND RELATED ARTWORK ARE COMPUTER GENERATED. ALL MODIFICATIONS ARE TO BE PERFORMED TO THE ORIGINAL DATABASE ON FILE IN SECTION 383.
3. THIS IS A REDUCED DIMENSION DRAWING. ADDITIONAL DIMENSIONS NEEDED TO DEFINE THE TRUE PROFILES OF THIS PART SHALL BE OBTAINED FROM THE MASTER CAD MODEL DATABASE NAMED 10398570\_A.ZIP.
4. FABRICATE AND INSPECT PRINTED WIRING BOARD PER IPC-6012D, CLASS 2, TYPE 2.
5. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED.

6

MATERIAL: ISOLA 370HR, 1 OZ COPPER CLAD, DOUBLE SIDED, 1.016 mm THICK EPOXY/WOVEN GLASS LAMINATE PER IPC-4101/L 126-1016-C1/C1

7

MATERIAL: 0.185 mm THICK EPOXY/WOVEN GLASS PREPEG PER IPC-4101/P 126-E2116 TW RE VC,

8

MATERIAL: 1 OZ. COPPER FOIL PER IPC 4562/3 CU E3 1 S XS 3

9. SURFACE FINISH TO BE ELECTROLESS NICKEL / IMMERSION GOLD (ENIG) PLATING PER IPC-6013. ALL PLATED HOLES AND CONDUCTIVE SURFACES SHALL BE PLATED WITH 0.025 mm COPPER MINIMUM. ALL Ni/Au PLATED AREA SHOULD HAVE MINIMUM THICKNESS OF 0.0025 mm FOR Ni AND 0.051 um FOR Au.
10. ALL HOLES SPECIFIED IN THE DRILL CHART ARE FINISHED HOLE DIAMETERS. HOLE TOLERANCE +/- 0.051 mm FOR NON-PLATED HOLES AND +/- 0.076 mm FOR PLATED HOLES.
11. FABRICATION TOLERANCES: END PRODUCT TRACE WIDTHS AND LANDS SHALL NOT VARY MORE THAN THE SMALLER OF 0.051 mm OR 10% OF THE TRACE WIDTH FROM THE GERBER DATA.

12

SOLDERMASK: PHOTO-IMAGED LIQUID POLYMER, GREEN COLOR, ITEM 4, ON BOTH SIDES OF BOARD IN ACCORDANCE WITH IPC-SM-840, TYPE B, CLASS 2, OVER BARE COPPER.

13

LEGEND OVER SOLDER MASK ON BOTH SIDES OF PWB USING WHITE NON-CONDUCTIVE EPOXY INK, ITEM 5. LEGEND MARKING SHALL NOT BE NEARER THAN 0.125 mm TO ANY PAD. CHARACTER HEIGHT SHALL BE 0.75 mm MINIMUM.

14. BOW AND TWIST: SHALL NOT EXCEED 0.07 mm / cm.

15. ELECTRICAL TEST: CONTINUITY SHORT AND OPEN TESTING ON ALL AVAILABLE EXPOSED TERMINAL PADS USING IPC-D-356A NETLIST DATA. CONTINUITY TEST SHALL BE AT 5 OHMS MAX. SHORTS TESTING SHALL BE PERFORMED AT 250V. MINIMUM ISOLATION OF 20M OHMS.

16

MARK IN LOCATION SHOWN WITH 1.0 mm MINIMUM HIGH CHARACTERS THE SERIAL NUMBER "NXXXXX" (WHERE N IS A VENDOR DESIGNATION LETTER ASSIGNED BY JPL AND XXXXX IS A UNIQUE 5 DIGIT SERIAL NUMBER FOR EACH PART. THE VENDOR DESIGNATION AND THE STARTING SERIAL NUMBER SHALL BE IN ACCORDANCE WITH THE VALUES PROVIDED IN THE PURCHASE ORDER).

REVISION HISTORY

REV	DESCRIPTION	CAT	DWN	ENGR	SEE JPL DATA MANAGEMENT SYSTEM FOR APPROVAL SIGNATURES AND DATES
A	----- INITIAL RELEASE -----	II	-	-	
B	CHANGED WHEB CONNECTOR, P6 TO 50 PINS. ADC_CS AND SG_SWAP ARE NOW ADC_CS1 AND ADC_CS2. SG_ENA IS NOW SPARE3. FL_METER_ENA AND THERMISTOR ENABLE CHANGED TO nADC_DRDY1 AND nADC_DRDY2 RETURN SIGNALS FROM THE WHEB ADCs. CFG0 THRU CFG2 NOW ARE INPUTS FROM THE WHEB. ADDED FLASH DEVICE, U11. ADDED SPI ADDRESS DECODER, U5. ADDED 1-WIRE INTERFACE, U13. ADDED SPI PROGRAMMING SIGNALS FOR WING BOARD FPGAs. ADDED ON-BOARD 3.0V REFERENCE DEVICE, U14, AND BUFFERS, U15, AND ISOLATION TEST CIRCUITS.	II	D. PALMER	C. SHELTON	

	AR	5			ETHONE 50-100R CATALYST 9	INK, WHITE EPOXY	IPC-4781	<div>13</div> <div>16</div>
	AR	4			PROBIMER 52 OR TAIYO PSR-4000	SOLDERMASK, LPI	IPC-SM-840 CL A	<div>12</div>
	AR	3				COPPER FOIL, 1 OZ.	IPC-4562/3	<div>8</div>
	AR	2			370HR	GLASS BASE EPOXY RESIN PREPREG, B-STAGE	IPC-4101/126	<div>7</div>
	AR	1			370HR	GLASS BASE EPOXY RESIN CU CLAD 1 OZ / 1 OZ	IPC-4101/126	<div>6</div>
	-1	ITEM NO	REFDES	DAI	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	SPECIFICATION	MATERIAL OR NOTE
QTY REQD								

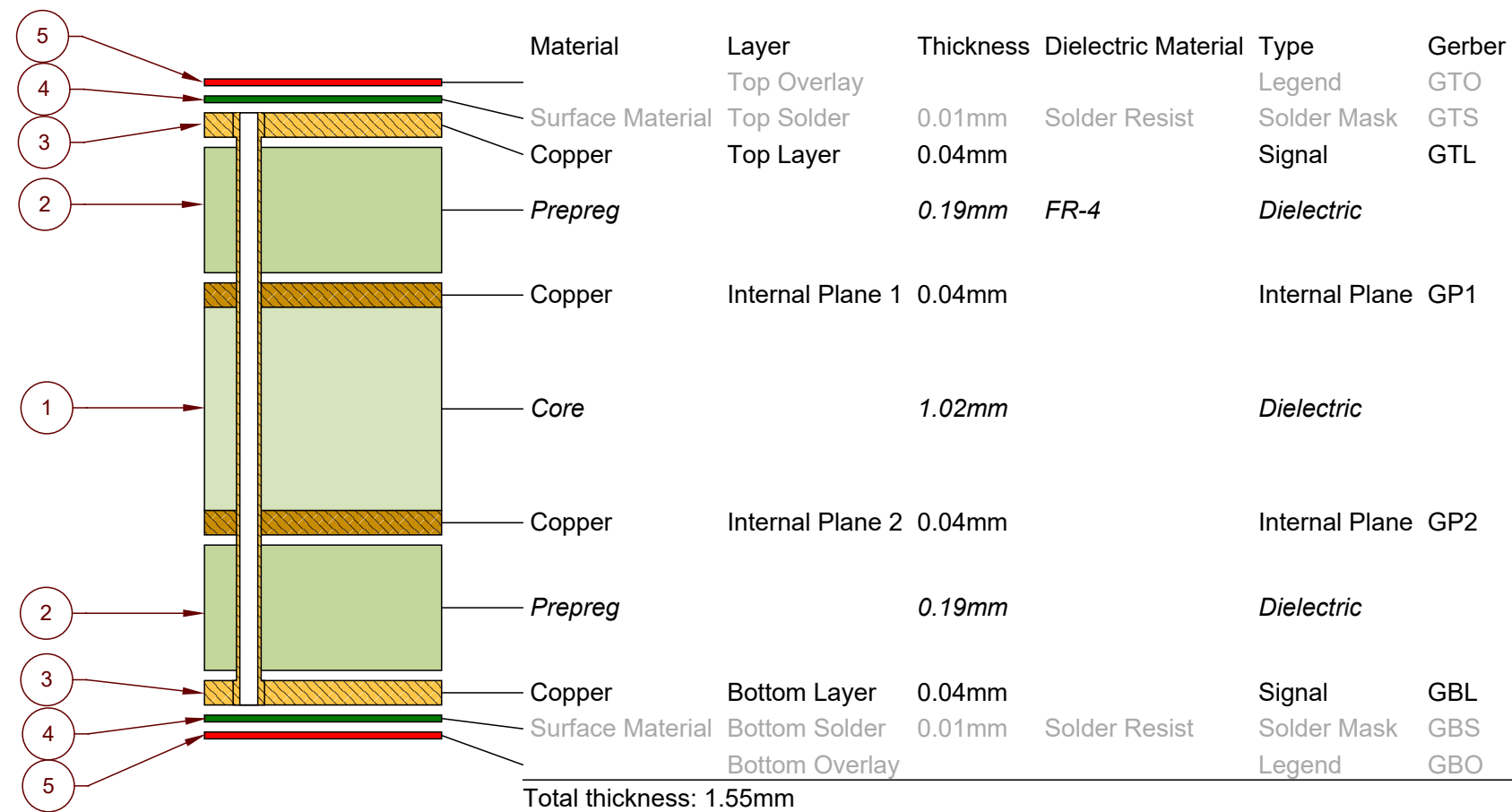
PARTS LIST

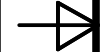
		CONTRACT NO _____		JET PROPULSION LABORATORY  CALIFORNIA INSTITUTE OF TECHNOLOGY PASADENA, CA 91109			
		DWN	D. PALMER				
		ENGR	C. SHELTON	TITLE  PRINTED WIRING BOARD, USEB MICRO-CONTROLLER UNIT			
		SEE JPL DATA MANAGEMENT SYSTEM FOR APPROVAL SIGNATURES AND DATES					
10398571	TMT						
NEXT ASSEMBLY	USED ON						
APPLICATION				SIZE B	DAI 23835	DWG NO 10398570	REV B
				SCALE: 1/1		UNCLASSIFIED	SHEET 1 OF 4

COPYRIGHT 2020 CALIFORNIA INSTITUTE OF TECHNOLOGY.  
GOVERNMENT SPONSORSHIP ACKNOWLEDGED.

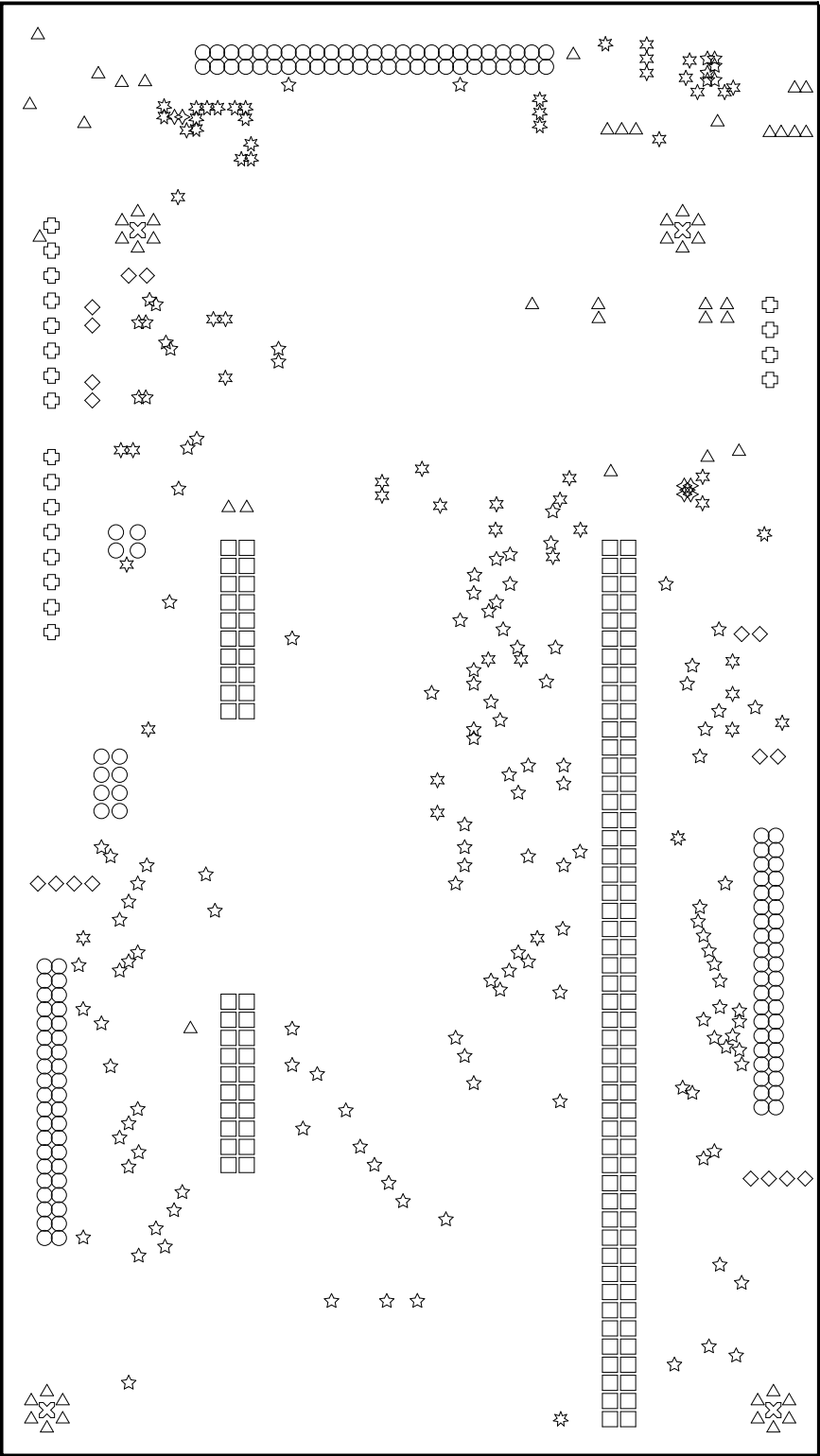
DO NOT SCALE DRAWING  
INTERPRET DIMENSIONING AND TOLERANCING PER ASME Y14.5 2009  
INTERPRET DWG PER ASME Y14.100

LAYER STACK LEGEND





Drill Drawing View (Scale 1:1)



Drill Table

Symbol	Count	Hole Size	Plated
◇	7	0.200mm	Plated
☆	140	0.310mm	Plated
✱	40	0.375mm	Plated
✳	20	0.500mm	Plated
△	55	0.700mm	Plated
◇	18	0.900mm	Plated
○	142	0.910mm	Plated
□	138	1.020mm	Plated
⊕	20	1.100mm	Plated
⊗	4	3.048mm	Non-Plated
584 Total			