



Board Characteristics - 20 LAYER BOARD

- Material: Nelco N4000-13EPSI
- Minimum trace width: 0.006" and clearance: 0.005" on Signal 1,6 (Top and Bottom);
- Minimum trace width and clearance: 0.005" on Signal 2,3,4,5,7,8,9,10,11,12 (all stripline);
- 1 oz copper for all power layers and for Signal 1,2 (Top and Bottom)  
1/2 oz copper for Stripline trace layers (Signal 2,3,4,5,7,10,11,12).
- Electroless Nickel Immersion Gold plating, with min. Ni: 2.5-5 um; Au: 0.05-0.2 um.  
Apply Solder Mask over bare copper.
- Board Thickness: 0.093 +/- 0.008
- Mill the Top and Bottom of board on the solder side to a thickness of 0.063" +/- 0.008
- Silkscreen on Component and Solder Sides.
- 45 degree chamfer.
- FHS tolerances: +/- 0.003 unless specified otherwise.
- Interlayer spacing as specified.
- Zc=55 Ohm, Zd=100 Ohm for all 0.005" stripline and all 0.006" microstrip traces.  
Perform TDR test for all signal layers.  
Present TDR test results for all signal layers.
- Via Fill and Overplate:  
Vias of this diameter must be completely filled with Peters PP-2795 or equivalent, planarized, and plated over with Copper and surface finish.  
The plated cap must adhere to fill material after 1x 550F solder shock.
- Remove all non-functional inner layer pads for pins and vias.
- Do not increase size of thermal pads and associated spoke connections on 0.041" and 0.0413" holes.

BOARD'S DRILL SCHEDULE

| DRILL SYMBOL | DRILL SIZE | COUNT | PLATED | Tolerance | COMMENT |
|--------------|------------|-------|--------|-----------|---------|
| ○            | .009       | 1517  | YES    | ---       |         |
| ⊕            | .0091      | 4839  | YES    | ---       | Note 13 |
| ⊙            | .011811024 | 18    | YES    | ---       |         |
| ⊖            | .02        | 2     | YES    | ---       |         |
| ⊗            | .035       | 40    | YES    | ---       |         |
| ⊠            | .041       | 544   | YES    | ---       |         |
| ⊕            | .041338583 | 24    | YES    | ---       |         |
| □            | .057       | 10    | YES    | ---       |         |
|              | .061023622 | 4     | YES    | ---       |         |
|              | .062       | 8     | YES    | ---       |         |
|              | .091       | 28    | YES    | ---       |         |
|              | .106       | 6     | NO     | ---       |         |
|              | .12598425  | 4     | NO     | ---       |         |
|              | .12795276  | 6     | YES    | ---       |         |
|              | .15        | 8     | NO     | ---       |         |

|   |         |                   |          |   |          |               |
|---|---------|-------------------|----------|---|----------|---------------|
| UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:<br>FRACTIONS DECIMALS ANGLES<br>.XX<br>.XXX<br>DO NOT SCALE DRAWING |         | CONTRACT NO.      |          | UNIVERSITY OF CHICAGO ELECTRONICS DEVELOPMENT GROUP |          |               |
| TREATMENT   |         | APPROVALS         | DATE     | TITLE<br>500MHz ADC Board Specification Drawing     |          |               |
| FINISH  |         | DRAWN M. Bogdan   | 10/23/14 | SIZE B  | FSCM NO. | DWG. NO. 2836 |
| SIMILAR TO  |         | CHECKED M. Bogdan | 10/23/14 | ISSUED  | REV. A   |               |
| ACT. WT   | CALC WT | SCALE 1/2         |          | SHEET   |          |               |