

Innovative Circuits, Inc. Product & Service Specifications

Flexible Circuitry: Multilayer Rigid-flex, Single & Double-Sided

Rigid Printed Wiring Boards: Multilayer, Single & Double-Sided

Materials: (RoHs Compliant)

- High Performance Flexible materials from *DuPont* (AP, FR, and LF).
- High Performance Laminates from *Isola, Nelco, Arlon, Rogers, Gore, Taconic, and Ventec*.
- Including Polyimide, FR4, Teflon, FR-27, FEP, and Ceramic filled composites.

Mechanical:

- Panel Size: 18" x 24" max; 12" x 18" min
- Layer Count: 24 max
- Hole Diameter: .004 drilled
- Line Width & Spacing: .003 min
- Dielectric Thickness Minimums: .001 Kapton, .002 (FR-4)
- Board Thickness: .125 max
- Aspect Ratio: 10:1
- Soldermask Clearance: .003 min, (1:1 With LDI Mask for Mask Defined BGA's)
- UL approved unpierced Area: 4"

Finishes:

- Electroless Nickel Immersion Gold (ENIG)
- Electroless Nickel Electroless Palladium Immersion Gold (ENEPIG)
- Hot-Air Solder Leveled
- Immersion Silver
- Electrolytic Wire Bondable Gold
- Electrolytic Hard Gold

Coatings:

- LPI Soldermask, Green, Blue, Red, Black, White
- LDI Soldermask, Green Satin, Red Satin, Blue Satin
- Flexible LPI Mask, Amber
- Silk screen: LPI White, Red, Black, Yellow

Special Processes:

- Controlled Impedance
- Bare Back Flex (Dual Access)
- Sculpted Flex (.010 thick copper)
- Blind & Buried Vias
- Via Plugging: Conductive & Non-Conductive
- Controlled Depth Milling
- Edge Plating & Exposed Edge Plated Holes
- Discreet Gold Plating

Innovative Circuits, Inc. Equipment List

Engineering / Tooling:

- Ucamco Integrator 8 Incoming CAD evaluation
- Bacon Traveler Generation Software And Barcode Tracking System
- CAM350 Workstations, Genesis 2000 Workstation
- POLAR Si8000 Impedance Modeling Software
- Zmetrix ST2000 Controlled Impedance Test System
- Mania-Barco SilverWriter 8000 Photoplotter; 16,000 dpi, 0.4 mil line
- Spartatics Automatic Registration Film Punch

Imaging:

- Orbotech Paragon 8800Hi Laser Direct Imager
- HEPA Filtered Class 10,000 Clean Room
- 2 X Teknek Cleaning Machines
- 2 X DuPont HRL-24 Hot Roll Laminators
- Hollmuller Green Line Thin Core Developer; 1/2 mil resolution
- C. A. Picard Layer Punch

Lamination:

- Custom 17 Pin and 13 Pin Tooling System's
- TMP High Temperature oil heat/cool vacuum press
- Lauffer Vacuum Lamination Press
- CA Picard Depinning System With Motorized Conveyer's
- Wise ChemStar Chemistry Clean Line

Drill / Route:

- Hitachi Model ND-15211/2E PCB Modular Drilling Machines (4) w/Vision 160K Spindles
- Hitachi Model ND-15213E PCB Modular Routing Machines (3) w/Vision
- Hitachi NR-4H210E 4 Spindle Router/Driller
- Glenbrook Technologies X-Ray System
- Accuscore Vertical Scoring Machine
- MASS Plane Raze SV-100 Planerizer
- Laser Drilling and Cutting (CO2, 50 Watts)
- ESI 5330xi Laser Drilling System (UV, 11 Watts w/pulse repetition)

Plating:

- (2) Plasma-Etch MK-II Plasma Chambers
- Pola & Massa Precision Deburring Machine
- Technic Electroless Copper line; Rohm and Haas
- Specialized Precise Electrolytic Plating lines (5)
- Hollmuller Green Line Thin Core Etcher
- Hollmuller Green Line Thin Core Resist Stripper
- Hollmuller Tin Strip System with Tsunami Fluid Heads

Soldermask & Nomenclature:

- Colight 1630 Exposure System
- AT-80 PD Semi Automatic Screen Printer
- 3 X Screen Tables, 3 X Grieve Ovens
- Dalux developer
- MASS VHF-200 Via Plugging machine
- Circuit Automation DP-VDM Vacuum Degassing System
- Orbotech Sprint 120 Inkjet Printer

Test and Inspection:

- Phenom Pro Electron Microscope
- Orbotech Fusion 20 AOI
- Microcraft EMMA ELX6146 Flying Probe Tester, 250 Volt
- Microcraft EMMA ELH6146 Flying Probe Tester, 250 Volt
- Impex proX2 Measuring Machine
- Optek Coordinate Measuring Machine
- Nikon Microsection Microscope w/ 3MP digital camera and Plato Solder Pot
- Buehler EcoMet 300 Pro Microsection Grinding/Polishing
- 7 X Stereo Microscopes for Inspection
- OXFORD CMI900 XR