U.S. CIRCUIT, INC.

MANUFACTURER OF PRINTED CIRCUIT BOARDS

COMMERCIAL
MILITARY
MEDICAL
BAREBOARD

U.S. CIRCUIT
MISSION
U.S. Circuit, Inc. will continually strive to be a leader in the printed circuit board manufacturing industry by providing the highest quality products and the best customer service possible. We will succeed by establishing long-term partnerships with our customers, vendors, and employees.

VISION
To be recognized as an industry leader delivering quality products on time, U.S. Circuit, Inc. will steadily grow and prosper.

CUSTOMER SERVICE
U.S. Circuit’s customer service department is committed to providing customers with accurate and timely communication in a pleasant and professional manner.
### SALES AND ENGINEERING DEPARTMENT
- Barcode Interface
- Computerized Production Planning System
- Computerized Sales Management System
- Si 6000b Controlled Impedance Design System

### CAM DEPARTMENT
- 3 Orbotech Genesis 2000 Cam Stations and 3 CAM350 Stations
- EIE RP362-DL Auto Loader Raster Photoplotter
- Glunz & Jensen 28” Film Processor

### PROGRAMMING, DRILLING & FABRICATION DEPTS.
- Ceco Hole Checker 8 Auto Optical Inspection
- Multiline XRT System 7000 X-Ray Post Lamination
- Tooling and Inspection
- 1 Excellon Concept 129 with built-in x-ray camera (180k RPM)
- 1 Excellon Concept 689 (180k RPM)
- 3 Excellon Mark VII Driller
- Excellon Mark VI Driller/Router
- Excellon Ex 200 Driller/Router
- 2 Excellon Mark V Driller/Router
- Laser Micrometer
- Accuscore Scoring Machine
- Automatic Stacking Machine
- Glenn Brook Real Time X-Ray
- DNC File Server
- Bevelers, Edgemate, Shear Machine
- Plasma Etchback (March Plasma Systems)

### DRY FILM AND PHOTO DEPARTMENTS
- Maskless Lithography Direct Digital Imaging System
- Multiline Semi-Automatic Artwork Punch
- Multiline Automatic Post-Etch Punching Of Inner Layers
- 4 Multiline Glass Phototools
- 2 ORC Exposure Unit 5kw
- 2 Hakuto Mach 610i Auto Cut-Sheet Laminators
- 3 Western Magnum Substrate Cleaner Line
- Chemcut 547 Semi-Automatic Developer

### MULTI-LAYER LAMINATION DEPARTMENT
- 2 Fully Automated TMP Four Opening Vacuum Lamination Presses
- 2 TMP Cold Presses
- Complete Multiline Registration System
- Multiline De-Pinner
- Ceco Overarm Digital Micrometer

### PLATING DEPARTMENT
- Semi-Automatic ENEPIG / ENIG Line
- Semi-Automatic Immersion Silver Line
- Potassium Permanganate De-Smear Line
- 2 1500 Gallon Direct Impingment Copper Plating Line
- 1 1500 Gallon Direct Impingment Tin Plating Line
- Semi-Automatic Electroless Copper Line
- Chemcut Semi-Automatic Conveyorized:
  - DES Line (develop/cupric chloride etc & strip)
  - Oxide Replacement Line
  - Inner Layer Clean Line
  - Film Stripping Line
  - Ammonia Etching Machines
  - Tin Stripper
- Double-Sided Scrubber/Deburrer Dryer Units
- Chemcut Pre-Clean and Flux Coater
- Quick Silver SM Hot Air Solder Coater Machine
- Marseco Semi-Automatic Post Cleaner System
- Kenetic Ionic Exchange Fully Automated Computerized Wastewater Treatment System
SOLDERMASK/SILKSCREEN DEPARTMENTS

DP-1500-2x Dual Sided LPI Soldermask Coater
Orbotech Inkjet Legend Printer
TC-150 Conveyorized Oven
Two Tc-120 Conveyorized Ovens
Olec Ap30-8000 Super Eight Exposing Unit
NuArc Flip Top 4k
Grieve Sc-350 82” X 64” X 32” Oven
Proheatco 82”X 64”X 42” Oven
Chemcut 547 Semi-Automatic Developer
3 24”X 30” Screen Tables
24” I.S. Pumice Scrubber Dryer
Western Magnum Substrate Clean Line
Complete Load and Unload System
Circuit Automation DP-VDM Vacuum System

QUALITY CONTROL DEPARTMENT

Polar Inst. CITS 500s Controlled Impedance (TDR) Test System
3 atg A5 Flying Probe Test Systems (Netlist Test)
3 Camtek Orion 804 WR (AOI)
Camtek Orion 868 (AOI)
Buehler Cross-Section Laboratory
Microscope with Digital Capture
Accu-scope Microscope
CMI PTX Series for Measuring Copper Thickness
CMI 900 XRF for Coating Thickness Measurement
YSC Digital Video Microscope
Nikon Sm2-10 Zoom Microscope
MicroDerm 500 for Measuring Gold/Nickel Thickness
Complete Chemical Analysis Laboratory
CVS Unit Including Automatic Chemical Analysis
Buck Scientific AA (Atomic Absorption) Spectrophometer
Thermo Spectronic 20d+ Spectrometer
Keaco Omega Meter 600R Iconograph
GENERAL INFORMATION
Founded In 1985
Product: Commercial & Military Printed Circuit Boards
40,000 (Custom built 2005)
37,500 Sq. Ft. Manufacturing Area & Quality Control
2,500 Sq. Ft. Administration Area
20 Miles North of San Diego

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BOARD CRITERIA
Panel Size: 18” x 24” Max.
Overall Thickness: .005-.250” Max.
No. Of Layers: 24 Max.
Line Width/Spacing: .003” Min. (Inner Layer)
.003” Min. (Outer Layer)
Drilled Hole Size: .006” Min.
Inner Layer Core Thickness: .003” Min.
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“Quick Turn” Upon Request

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MATERIALS
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High Temp FR4
Getek Laminate
Rogers Type 4003, 4350
Nelco N4000-13
Polyimide
Halogen Free

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PROCESS CAPABILITIES
Maskless Lithography Direct Digital Imaging System
Artwork Generated via Gerber with EIE RP362-DL
Multiline Semi-Automatic Film Punch
Dryfilm Imaging
Post-Etch Punching Of Cad Generated Artwork And Layers
Automatic Optical Inspection (AOI) On Four Camtek Orion 804
Vacuum Assisted Lamination with Two Hot And Two Cold Presses
Drilling With Complete Electronic Programming Functions
Conveyorized AOI Inspection
Plasma Etch
Potassium Permanganate desmear System
Electroless cuposit Line
Direct Impingement Copper Plating Line
Tin Lead Hot-Air-Leveling (Hot-Air Solder Leveling—HASL) And
Lead-Free HASL
Electroless Gold, Immersion Gold, Hard and Soft Gold (Full Body),
ENEPIG Plating (Electroless Nickel, Electroless Palladium,
Immersion Gold)
Immersion Silver, Immersion Tin, OSP and Carbon Paste
Liquid Photoimageable Soldermask (LPI Mask)

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QUALITY CONTROL
ITAR Registered since 2009
MIL-PRF-55110 G with Etchback Approved
for both GFN & GIN materials
ISO 9001:2008 Registered
IPC-A-600 Quality and Manufacturing Standard
UL Approval Rating 94v-0
Polar Instruments TDR for Impedance Control
3 atg A5 Flying Probe Test System (Netlist Test)
TrueChem Wet-Process Statistical Process Control (SPC)
Mil-C-45662 Equipment Calibration System
Microsection Preparation and Evaluation (Full Group ‘A’ Testing)

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UNDERWRITERS LABORATORIES, INC.
Certificate of ISO 9001:2008 Registration

DEFENSE LOGISTICS AGENCY
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MIL-PRF-55110G, Type 3 GI Polyimide Material
Certificate of Qualification

DEFENSE LOGISTICS AGENCY
MIL-PRF-55110G, Type 3 GFN FR-4 Material
Certificate of Qualification

ITAR REGISTERED
Certificate of Registration

Please visit our website for the most recent certifications.
FOUNDED IN 1985, U.S. Circuit, Inc. is dedicated to the delivery of consistently superior product. From our spacious, state-of-the-art facilities, we are dedicated to excellence through innovation, technology and most importantly, service.